INDIAN INSTITUTE OF TROPICAL METEOROLOGY

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PS/125/28/2016 13 July 2017

Sub: Minutes of the Pre-bid meeting of the " EC System (3D Sonic + C_2O_2 – H_2OGas Analyzer + Data Logger" - Qty 04 Set (as per tender document) held on 03/03/2016 at IITM, Pune.

In response to our Global Tender Notice No. PS/125/48/2016/, representative of the prospective bidder / firm / company had attended the meeting:

At the outset Convener of the meeting welcomed the member & representative of the prospective bidder / firm / company. He briefed the tender document, scope of supply and technical parameters of the equipment to be procured.

Representative of the prospective bidders / firms / companies was asked about any suggestion, queries or technical advancement regarding tender document & Equipment to be procured. The Queries and Institute's reply to the queries are as given below:

1. **Query :** CO2-H2O Infrared Gas analyzer Specs (Point iii): CO2 calibration in the range 0 to 1000 ppm or higher and H2O in range 0 to 60 mmol/mol or higher. Amend to: CO2 calibration in the range 0 to 3000 ppm

   Institute's Reply : The range is kept 0 to 1000 ppm as this is good enough for flux measurements to cover almost all of the situations. Higher range of calibrations is welcome as mentioned in the specifications, but not a must.

2. **Query :** General Specs (Point D): You have requested that the system can be a separate unit or it may be integrated single unit. However, in the 3D Sonic anemometer specification you have requested for wind direction measurement should be in the range 0-359 deg, as per the separate unit, it is possible to have 360 deg measurement in the sonic anemometer, whereas in the integrated single unit type EC system it is not possible to have 360 deg measurement.

   Institute's Reply : Our requirement is 360 deg wind direction measurement, whether single unit or separate unit.

3. **Query :** CO2/H2O Infrared gas analyzer (Point f): It should be able to continuously operate during foggy and rainy conditions without loss of data.

   Amend: It is practically not possible to measure the gas analyzer data during heavy fog and rainy conditions, we suggest this point should be removed or it should be read as system should be able to continuously operate during light foggy/rainy conditions without loss of data.

   Institute's Reply : 'Light foggy/rainy conditions' is what we meant.

4. **Query :** Data acquisition system (Point 1): The data acquisition system can be single unit for EC system at all four levels (preferred) or it can be separate units. Time synchronization among EC systems at four levels is very important and needs to be demonstrated.

   Amend: It is practically not possible to have a single unit data acquisition system for EC systems at all four levels, Due to that fact that even if make an arrangement of logging all the data at single locations, the programming of the same will be very complicated also, the fact that Data files will be way more complicated. Instead we suggest you go for separate units for data acquisition system. However, the time synchronizations among EC system at four levels can be achieved using GPS inside the data acquisition system. All the data from all four systems can be collected separately in the same laptop. Which can be integrated further in the lab.

   Institute's Reply : It is up to the manufacturers/ vendors to use a single data acquisition system or separate units at each level. The acquisition system should meet the sampling requirements mentioned in the specifications.