CPCB IT Division

Protocol for Data Transmission from CAAQM Stations Existing as on Date

1. Data Format

➢ Data file on real time basis having 15 minutes average values in a prescribed format attached at Annexure-I should be generated at the station for which Instrument Supplier is responsible.

➢ File should be updated after every 15 minutes.

➢ Data intervals like 00:15, 00:30, 00:45, 01:00 should be fixed at the station.

➢ Station file name should be exactly as the name of the station to be displayed on the web portal. i.e. Sanathnagar, NehruNagar. Here precaution is to be taken that no space between words should be given or no special characters should be used.

➢ File should be recorded in a folder c:\data\sanathnagardata.txt

➢ File should allow data appending sequentially.

➢ Date of last file record appended in the file should be recorded and data afterwards be placed in the data file.

➢ File appending should continue subject to max 97 lines. First in First out mechanism shall be followed in keeping file size to 97 lines.

➢ Hence, in the specified folder c:\Data\ there will be a single file which will keep appending as per format attached.

➢ Duplicate entry of any data should not be made in the file.

➢ System should have capability to create previous record data file for which user will give the date. This is required to have lost data makeup in the final database, if any.

2. Data Mapping

➢ Protocol for each parameter is fixed as below:
  1. 15 Minutes average value will be provided by the operator of the CAAQMS
  2. Each SPCB will have the parameter as mentioned in the table only. Not even a small gap or space is provided other than the mentioned table is acceptable.

3. Standard Parameter Naming Protocol and Conversion factors Table

Parameters Name	Parameter Abbreviations	Unit	Conversion factors at 25°C
Rack Temperature	Temp	°C	
Carbon Monoxide	CO	mg/m^3	1ppm=1.145mg/m^3
Sulphur Dioxide	SO2	$\mu g/m^3$	1ppb=2.62$\mu g/m^3$
Nitric Oxide	NO	$\mu g/m^3$	1ppb=1.23$\mu g/m^3$
Nitrogen dioxide	NO2	$\mu g/m^3$	1ppb=1.88$\mu g/m^3$
Oxides of Nitrogen	NOx	ppb	--
Ozone	Ozone	$\mu g/m^3$	1ppb=1.96 $\mu g/m^3$
Particulate Matter less than	PM_{10}	$\mu g/m^3$	--

10 Micron size			
Wind Speed	WS	m/s	--
Wind Direcction	WD	deg	--
Ambient Temperature	AT	^{o}C	--
Relative Humidity	RH	%	--
Barometric Pressure	BP	mmHg	--
Solar Radiation	SR	W/mt^2	--
Rain Fall	RF	mm	--
Vertical Wind Speed	VWS	degree	--
Particulate Matter less than 2.5 micron size	$PM_{2.5}$	$\mu g/m^3$	--
Benzene	Benzene	$\mu g/m^3$	1ppb=3.19$\mu g/m^3$
Toluene	Toluene	$\mu g/m^3$	1ppb=3.77$\mu g/m^3$
Xylene	Xylene	$\mu g/m^3$	1ppb=4.34$\mu g/m^3$
Ethyl Benzene	Eth-Benzene		1ppb=4.34$\mu g/m^3$
M+P_Xylene	MP-Xylene		1ppb=4.34$\mu g/m^3$
Methane	CH_4	$\mu g/m^3$	1ppb=0.65$\mu g/m^3$
Ammonia	NH_3	$\mu g/m^3$	1ppb=0.70$\mu g/m^3$
Formaldehyde	HCHO	$\mu g/m^3$	1ppb=1.23$\mu g/m^3$
Mercury	Hg	$\mu g/m^3$	1ppb=8.20$\mu g/m^3$

Note: 1. Any other parameter can be added with the prior approval of IT Division ONLY.

4. Internet Connectivity

➢ Internet connectivity should be available on 24X7 basis for data transmission with an uptime of 99.9%. For this purpose every CAAQM station should have two kinds of connection:

    i) Leased Line Circuit of at least 01 Mbps capacity

    ii) Broad Band connectivity through telephone line. Both facilities should be configured in ready to use condition. If possible auto failover should be created.

Note: Connectivity through Datacard is not acceptable except in any special circumstances, where both of these types of connectivities are not available. For such case CPCB IT Division shall be consulted before taking a final decision.

5. Other Information:

1. Area Map showing station location
2. Latitude, Longitude and altitude of the station
3. Photo of station along with nearby areas
4. One page write-up about the station activities in the vicinity of station including major pollution sources like nearby road, rail, restaurants, generator sets, etc.

1,2,3,4,5,6,7,8,
Station name, Parameter, Date from, Date to, Value,calibrationflag,maint flag,Remark,
Sanathnagar,CO,27-04-2015 13:00,27-04-2015 13:15,0.2497,0,0,analyserfaulty,
Sanathnagar,CO,27-04-2015 13:15,27-04-2015 13:30,0.2470,0,0,analyserfaulty,
Sanathnagar,CO,27-04-2015 13:30,27-04-2015 13:45,0.2470,0,0,analyserfaulty,
Sanathnagar,CO,27-04-2015 13:45,27-04-2015 14:00,0.2470,0,0,analyserfaulty,
Sanathnagar,Ozone,27-04-2015 13:00,27-04-2015 13:15,59.6710,0,0,flowproblem,
Sanathnagar,Ozone,27-04-2015 13:15,27-04-2015 13:30,59.5960,0,0,analyserfaulty,
Sanathnagar,Ozone,27-04-2015 13:30,27-04-2015 13:45,59.5960,0,0,analyserfaulty,
Sanathnagar,Ozone,27-04-2015 13:45,27-04-2015 14:00,59.5960,0,0,analyserfaulty,
Sanathnagar,NO,27-04-2015 13:00,27-04-2015 13:15,0.5922,0,0,analyserfaulty,
Sanathnagar,NO,27-04-2015 13:15,27-04-2015 13:30,0.4435,0,0,0,
Sanathnagar,NO,27-04-2015 13:30,27-04-2015 13:45,0.4435,0,0,0,
Sanathnagar,NO,27-04-2015 13:45,27-04-2015 14:00,0.4435,0,0,0,
Sanathnagar,So2,27-04-2015 13:00,27-04-2015 13:15,3.5233,0,0,0,
Sanathnagar,So2,27-04-2015 13:15,27-04-2015 13:30,3.7278,0,0,0,
Sanathnagar,So2,27-04-2015 13:30,27-04-2015 13:45,3.5233,0,0,0,
Sanathnagar,So2,27-04-2015 13:45,27-04-2015 14:00,3.7278,0,0,0,
Sanathnagar,RT,27-04-2015 13:15,27-04-2015 13:30,33.2260,0,0,0,
Sanathnagar,RT,27-04-2015 13:30,27-04-2015 13:45,33.2240,0,0,0,
Sanathnagar,AT,27-04-2015 13:45,27-04-2015 14:00,33.0960,0,0,0,
Sanathnagar,AT,27-04-2015 14:15,27-04-2015 14:30,33.3740,0,0,0,
Sanathnagar,RH,27-04-2015 13:15,27-04-2015 13:30,41.3080,0,0,0,
Sanathnagar,PM10,27-04-2015 13:15,27-04-2015 13:30,30.3000,0,1,analyserfaulty,
Sanathnagar,PM10,27-04-2015 13:30,27-04-2015 13:45,30.3000,1,0,analyserfaulty,

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Please note:
Here 0-zero stand for normal operation of instruments in **calibration flag status**

1- Stands for calibration mode ON and data will not be considered for averaging purpose.
   Same is true for Maintenance mode where 0-normal and 1-mintenance mode ON