USER'S MANUAL

AirQWeb

Turnkey Instruments Ltd.

July 2016

User's Manual
Authorization Memorandum

I have carefully assessed the User's Manual for AirQWeb. This document has been completed in accordance with the requirements of the Turnkey Instruments Development Methodology.

MANAGEMENT CERTIFICATION - Please check the appropriate statement.

_____ The document is accepted.

_____ The document is accepted pending the changes noted.

_____ The document is not accepted.

We fully accept the changes as needed improvements and authorize initiation of work to proceed. Based on our authority and judgment, the continued operation of this system is authorized.

_____ _____

Mike Leck DATE
Managing Director

_____ _____

Dave Brooks DATE
General Manager

_____ _____

Alan Taylor DATE
Director

USER'S MANUAL

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1.0 GENERAL INFORMATION

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1.1 AirQWeb Overview

AirQWeb is a web application that allows you to analyse the results from the environment sensors that collect data on environmental information (TSP, PM10, PM2.5, and PM1) along with any external sensors such as pollutant gasses, vibration, noise levels etc. AirQWeb enables you to generate charts such as Table charts, Line charts, Area charts, Rose charts, Average Gauges and also charts with sliders to analyze the data for a specific time span. You can also control the instruments using this application such as start/stop sampling, change instrument configuration etc. You can import/export data and charts and generate reports as well using this web application.

When you buy a dust monitoring instrument from Turnkey Instruments Ltd. your account will be created and your instrument will be added to your account. You will be given a username and password to access your instrument(s) over the web using AirQWeb.

AirQWeb has been developed with multiple background services such as service that uploads the data from the instruments, service for online sampling that collects data from the instruments every minute, service to generate email & SMS alerts in case of an exceedance, etc.

1.2 Authorized Use Permission

Usage of this software is limited to its owner via the terms of its development. AirQWeb is wholly owned by Turnkey Instruments Ltd. and may not be updated or amended without their express consent.

1.3 Points of Contact

1.3.1 Information/Help Desk

For additional information and/or support Turnkey Instruments Ltd. can be contacted via email techsupport@turnkey-instruments.com or phone (+44) 1606 812 666.

1.4 Organization of the Manual

Section 2 describes the system architecture of the application including the data flow and the user access levels. Section 3 explains the login/out operations and the main panel of the application. Section 4 gives details on how to use the application with the help of screenshots.

2.0 SYSTEM SUMMARY

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AirQWeb is a web application that allows you to analyze the data from your instruments on the web. AirQWeb automatically uploads the data from the instruments and saves it in the database and enables you to generate charts such as Table charts, Line charts, Area charts, Polar charts, Gauges and also charts with sliders to analyze the data for a specific time span.

AirQWeb enables you to control your instruments on the web from anywhere in the world. You can start/stop online and offline sampling, change the configuration of the instruments and upload the data manually (although the application automatically uploads the data).

AirQWeb lets you import the data in a particular format, you can export the data from AirQWeb in different formats such as excel, PDF, CSV and with charts as images. You can also generate reports with the data and the chart giving the exceedance limit i.e. any value higher or in between the limits will be highlighted in the report.

AirQWeb also facilitates you to generate 3D graphs that depict the **time of day vs. value** for a selected **date range**. You can also compare the data from two instruments and generate the graphs to analyze the comparison.

AirQWeb also allows you to publish the data from any of your instruments if you want everyone to visualize it. Your instrument will be displayed in the map on the main page of the website. Note: only the data you publish is visible on the main map.

2.1 System Architecture

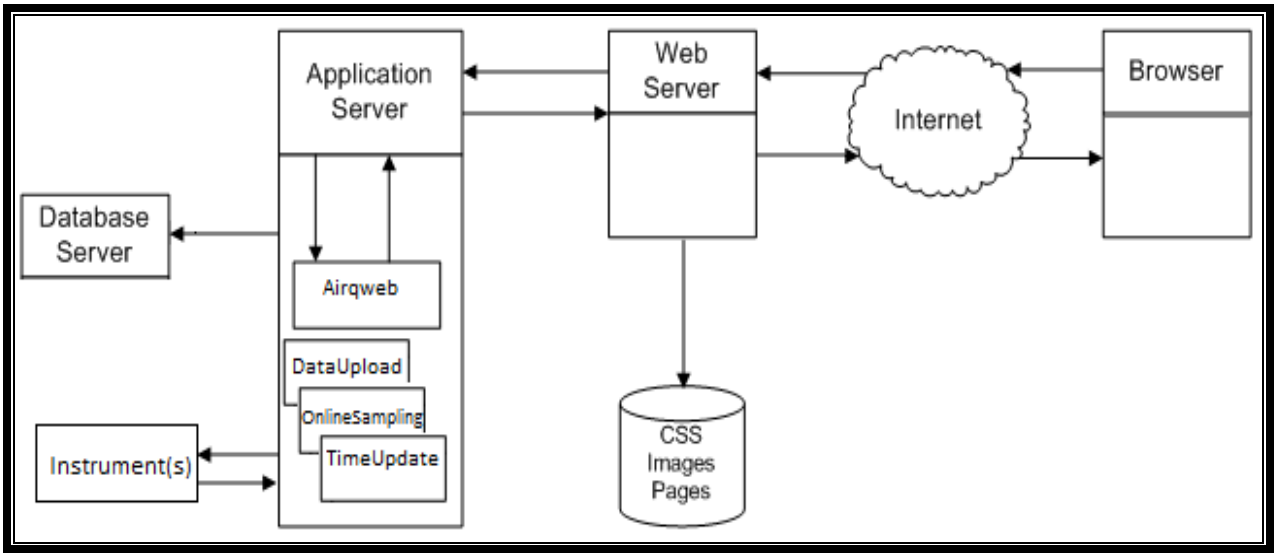

Figure 2.1

2.2 Data Flows

The above diagram shows how AirQWeb fits within standard enterprise web application architecture. The data flow in the architecture is as follows:

1. The browser sends a request for a resource of some kind to the web server.
2. The web server decides what to do with the request.
    a. Static resources such as images, CSS and static web pages are read from disk and returned directly to the browser.
    b. Requests for dynamic resources (such as a customer login) are forwarded to the application server.
3. The application server passes the request to the web application.
4. The web application constructs a response using data from the database server when necessary.
5. The response is passed back up the chain to the browser.
6. The browser displays the response.

2.3 User Access Levels

Users of the application can be categorized into four access levels, a **general user**, a **customer, viewer only customer** and a **manager**. A **general user** can only visualize the data that has been published by the customers. General users can also export the data and the graphs. **Customers** are given username and password to access their accounts and control their instruments. **Viewer Only** customer role is a child of a customer role, they are given a username and password to only visualize the data from a customer's instruments but they cannot perform any instrument operations like start/stop sampling etc. **Managers** can add/update/delete users and instruments.

2.4 Contingencies and Alternate Modes of Operation

There are multiple applications running on the background, in case the application server goes down the background applications will stop running. In that case, online sampling feature will not be working and no data will be uploaded to the database hence no alerts will be sent. But the instruments will keep on storing the data in the internal memory and this data will be uploaded automatically after the connection is reestablished. After the server is up, online sampling will start normally.

3.0 GETTING STARTED

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3.1 Register

If you want to use any of the Turnkey instruments with AirQWeb you must create an account on AirQWeb and register the instrument(s) in to your account. Log on to https://www.airqweb.co.uk and click the 'Hello Guest' link at the top right corner of the page and click 'Register Here' in the drop down menu as show in the figure 3.1.

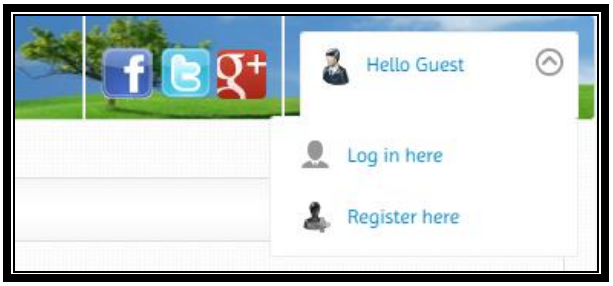

Figure 3.1

This will open the registration form as show in the figure below, enter the details and complete the registration form. Hover over the cursor on (?) next to the text box to get instant help tip for the field.

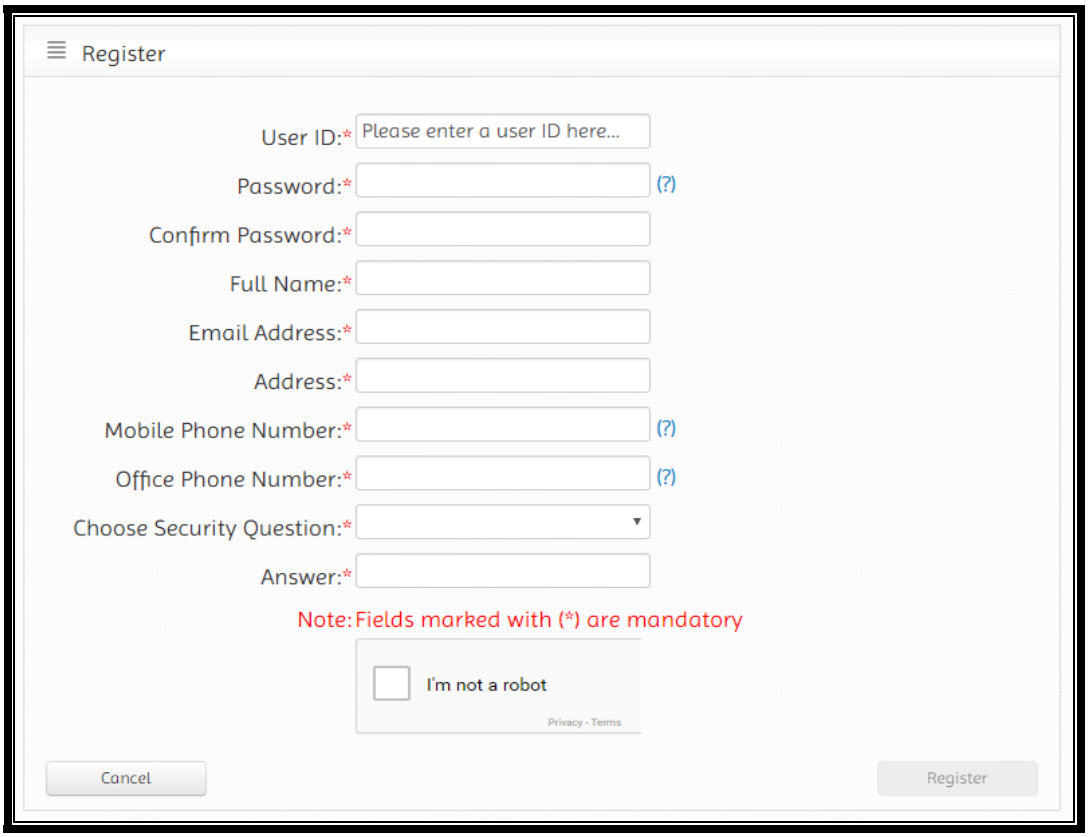

Figure 3.2

Once you have successfully registered on AirQWeb, you will be able to log in to your account on AirQWeb as explained in the following section.

3.2 Logging On

Click ‘Hello Guest’ link at the top right corner on the page and select ‘Log in here’ from the drop down menu as shown in figure 3.3.

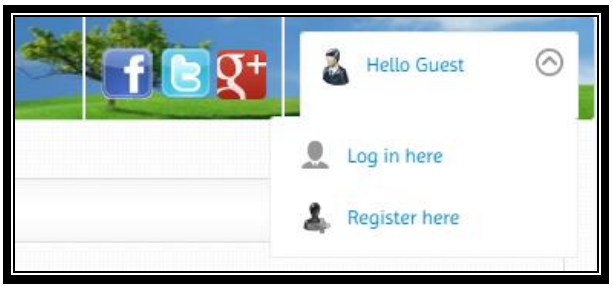

Figure 3.3

Enter the username and password.

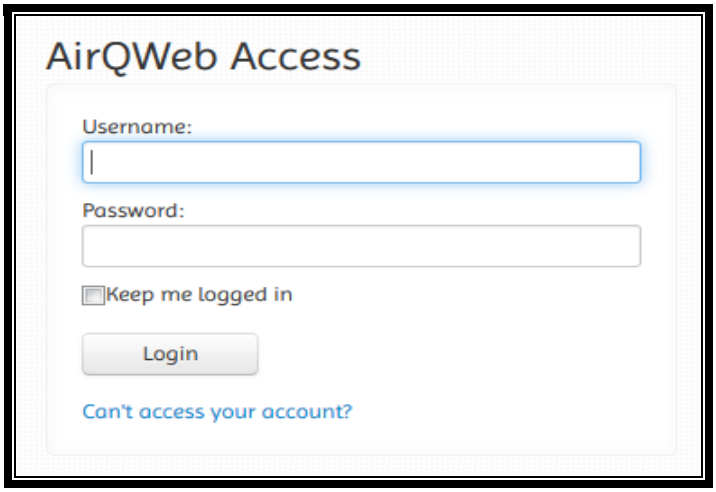

Figure 3.4

A successful login will take you to the Main Panel which should look like the following.

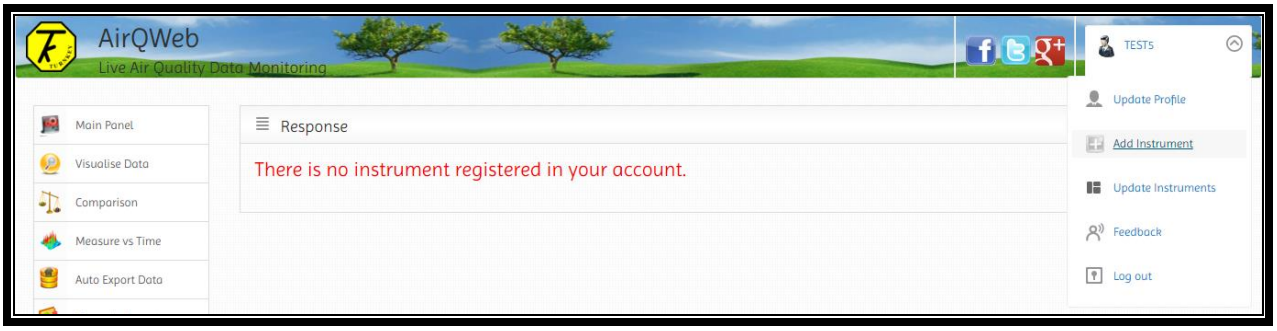

Figure 3.5

Since you have no instruments registered to your account, you will see the above message on the screen. You must add at least one instrument. Click on the USER ID at the top right corner of the screen and select Add Instrument from the drop down menu. You will be redirected to the following form

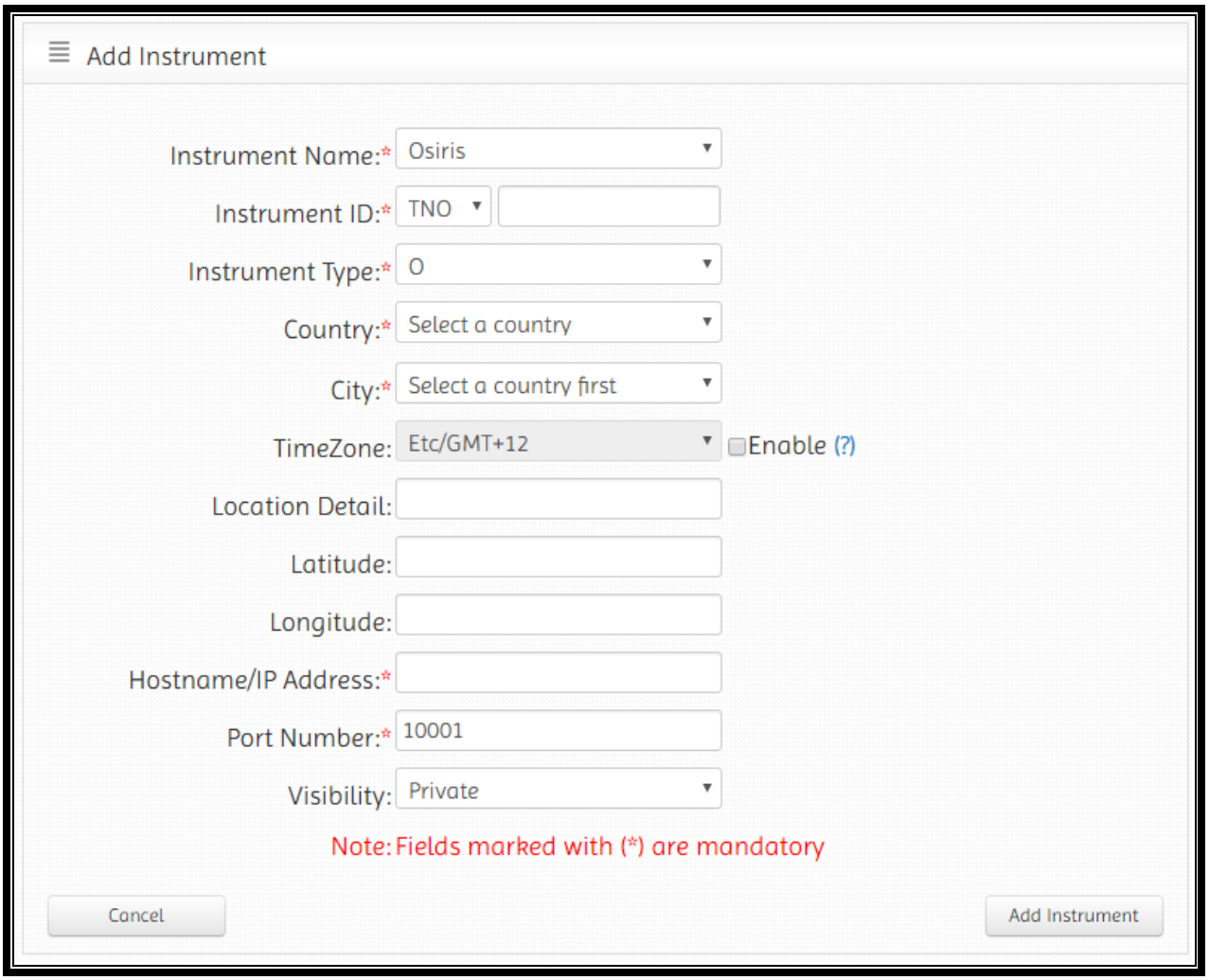

Figure 3.6

Enter the details of the instrument and click 'Add Instrument' button at the bottom right corner of the page. AirQWeb will automatically select the time zone depending on the selected location. If you want to store the data for a different time zone then please enable time zone text box and select a time zone to store the data. It is recommended that you enter the latitude and longitude values to show the accurate location on the map. If you do not enter GPS coordinates, AirQWeb will use the default GPS coordinates for the selected city. Please select 'Visibility : Public', if you want to display the data from the instrument on the main page of AirQWeb, otherwise keep it private. It is very important that you enter the correct information to allow the instrument(s) to work with AirQWeb.Once you have successfully added the instrument(s) to your account and collected some data, the Main Panel will look like the following image.

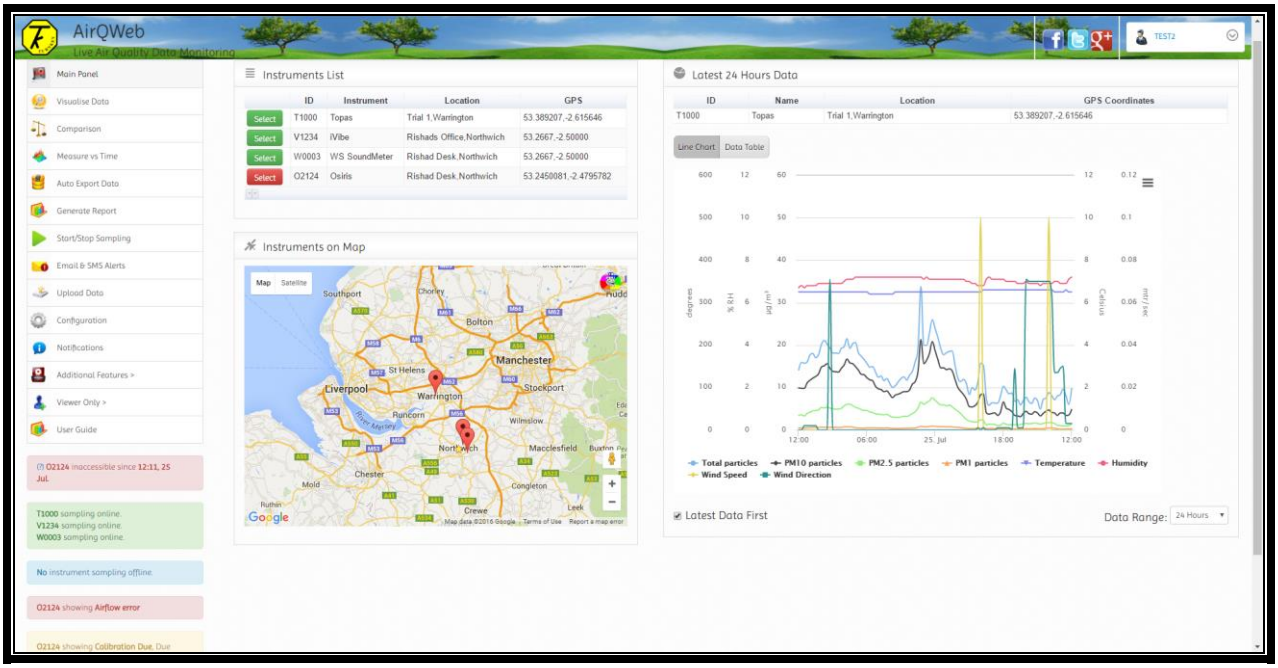

Figure 3.7

The '**Main Panel**' shows the latest available data for the selected instrument in a data table and line charts. All the registered instruments are shown in the list as well as on the map according to the GPS coordinates. The instruments list shows which instruments are sampling online or offline and which have a warning or error. The green button means the instrument is sampling online, a blue button shows that the instrument is sampling offline, a yellow button shows a warning for the instrument and the red button shows either the instrument is out of contact or an error has occurred for the instrument. On the bottom left corner of the page, the messages show the details of loss of contact, online/offline instruments, errors, warnings and the calibration due dates.

There are two tabs on the right hand side of the page. One is for Line Chart and the other is for Table Chart. You can select the instrument from the list/map to visualise the latest data. At the bottom left corner of the graph, there is a checkbox to show the latest data first. At the bottom right corner of the chart there is an option to select the data range. You can select a data range from 1 hour to 7 days of the latest data.

3.3 System Menu

3.3.1 Left Menu

There is a menu list on the left-hand side of each page as shown in figure 3.8

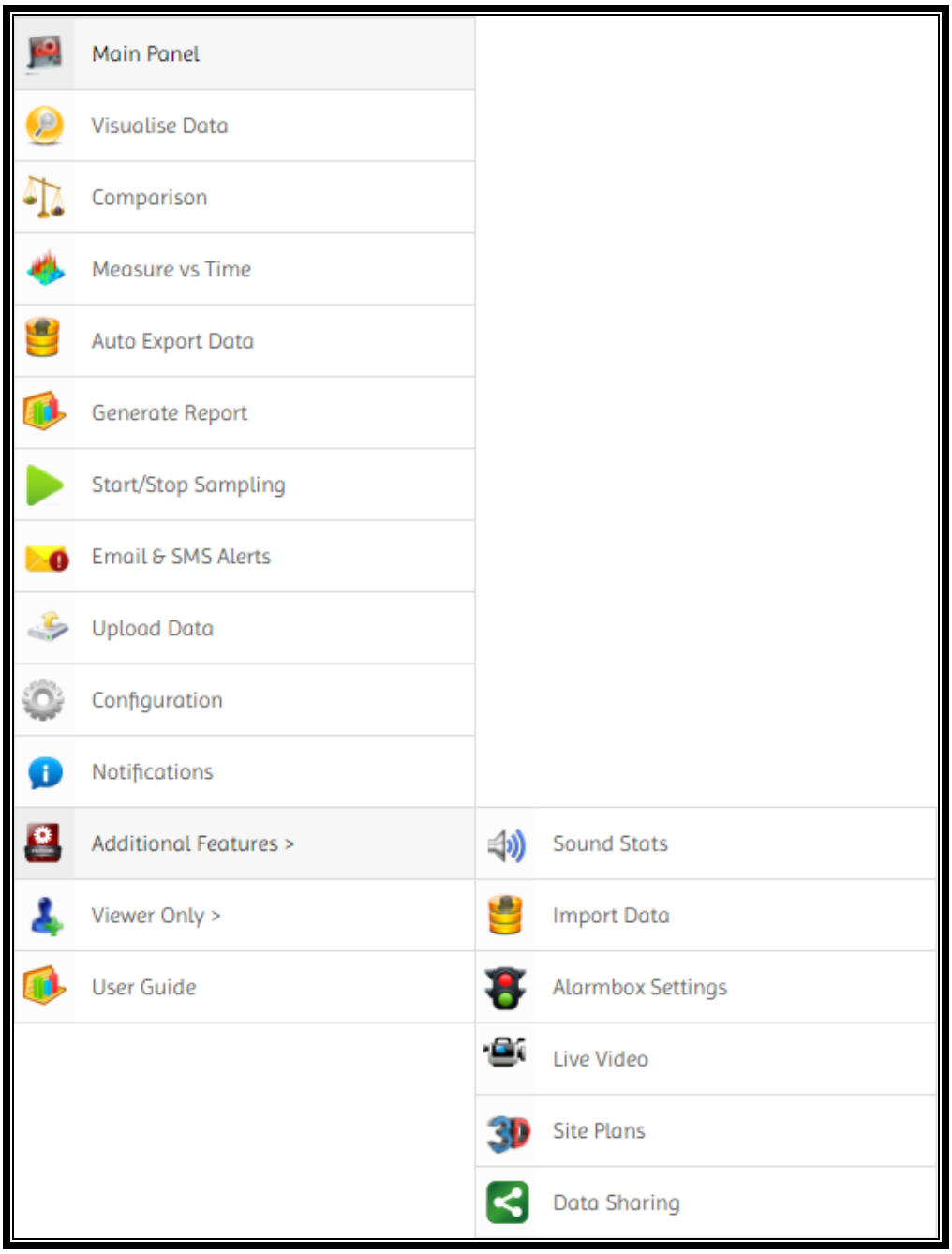

Figure 3.8

This menu contains all the options available in AirQWeb to control your instruments, visualize data from the instruments, configure alerts, watch live video, generate reports, etc. Detailed instructions on how to use these options are covered in section 4.

3.3.2 Profile

This section covers the add/update options of the user and the instruments i.e. **Update Profile, Add Instrument**, **Update Instrument**, Feedback as highlighted in figure 3.9

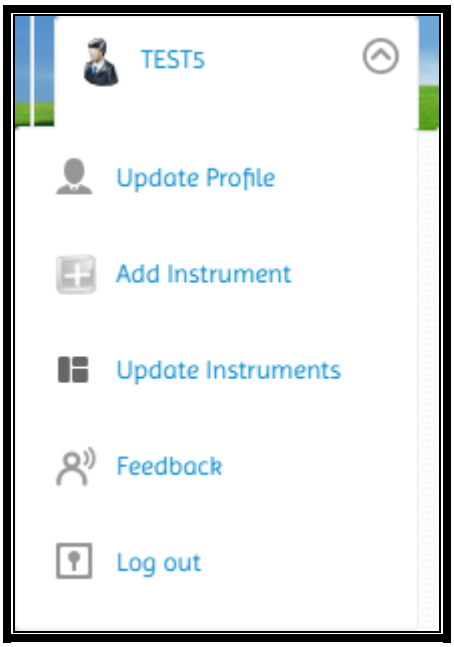

Figure 3.9

You can update your account details such as the password, email address, security question, etc. using the **Update Profile** option. **Add Instrument** option allows you to register a new instrument into your account. **Update Instruments** option allows you to update the details of the instruments such as location, GPS Coordinates, IP address, etc. It also allows you to delete the instrument if you want. You can leave your feedback using the feedback option in the menu. Detailed instructions on how to use these options are covered in section 4.14 and 4.15.

3.4 Logout System

You can click **Log out** link in the profile menu at the top right corner of the screen to logout from your account as shown in figure 3.5. This will take you to the main page of the website or you can simply close the browser tab which will end the session.

4.0 USING AIRQWEB

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4.1 Visualise Data

When you click on Visualise Data option in the left menu as shown in figure 4.1

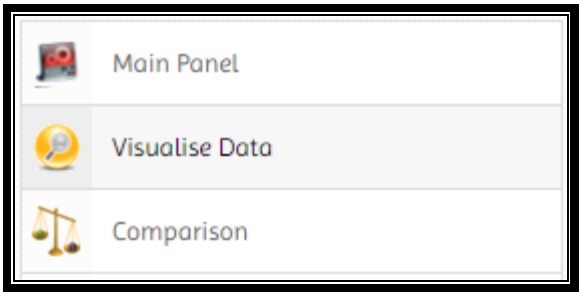


Figure 4.1

AirQWeb shows you the list of instruments registered in your account.

4.1.1 Instrument Selection

The instruments are shown in a list as well as on the map. You can select your instrument from either as shown in figure 4.2.

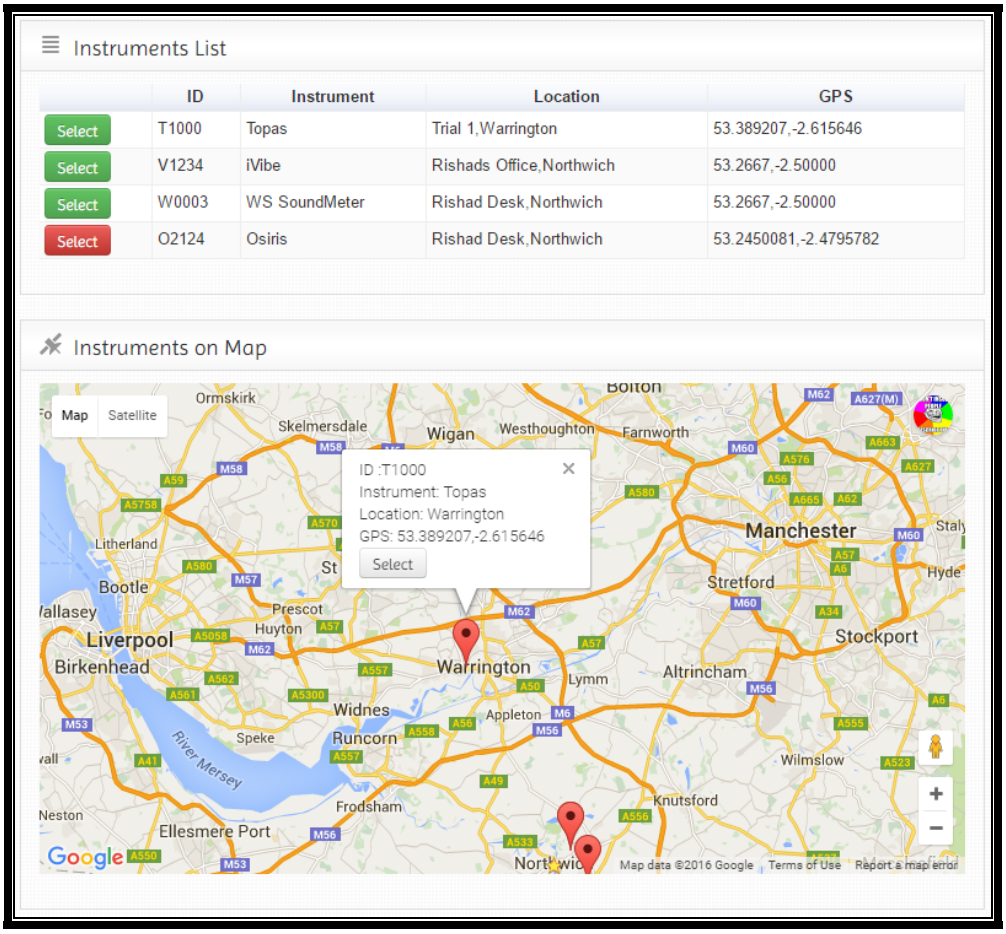


Figure 4.2

When you click a pinhead on the map, it opens the info-window which shows the details of the instrument and you can select the instrument from the info window by clicking on the select button. Instruments are shown on the map using GPS coordinates you set, if you do not set the GPS coordinates manually, the application uses the default GPS coordinates for the selected city. After you have selected the instrument, the application asks you to select date and time for which you want to visualise the data.

4.1.2 Select Date/Time

This page lets you to select the dates (to and from) to search the data for the selected instrument from the database. Dates can be selected from the calendar and the time can be selected from the drop-down list as show in figure 4.3

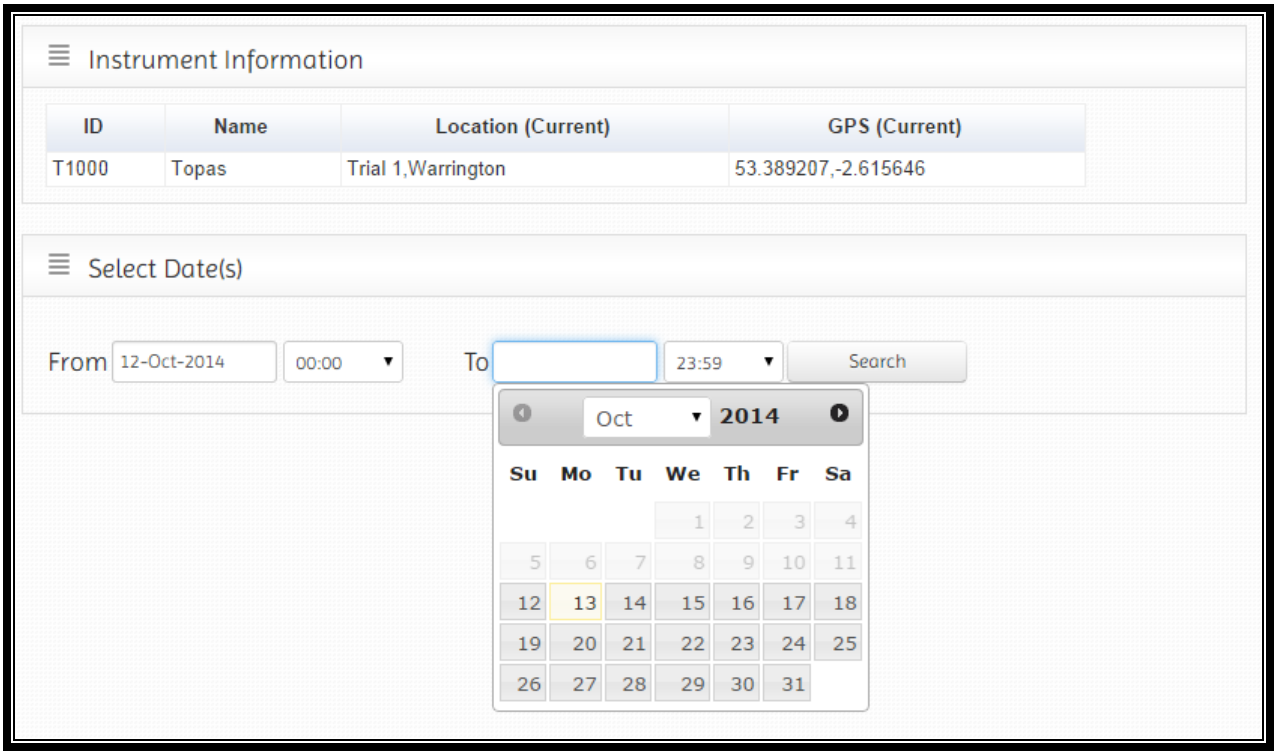


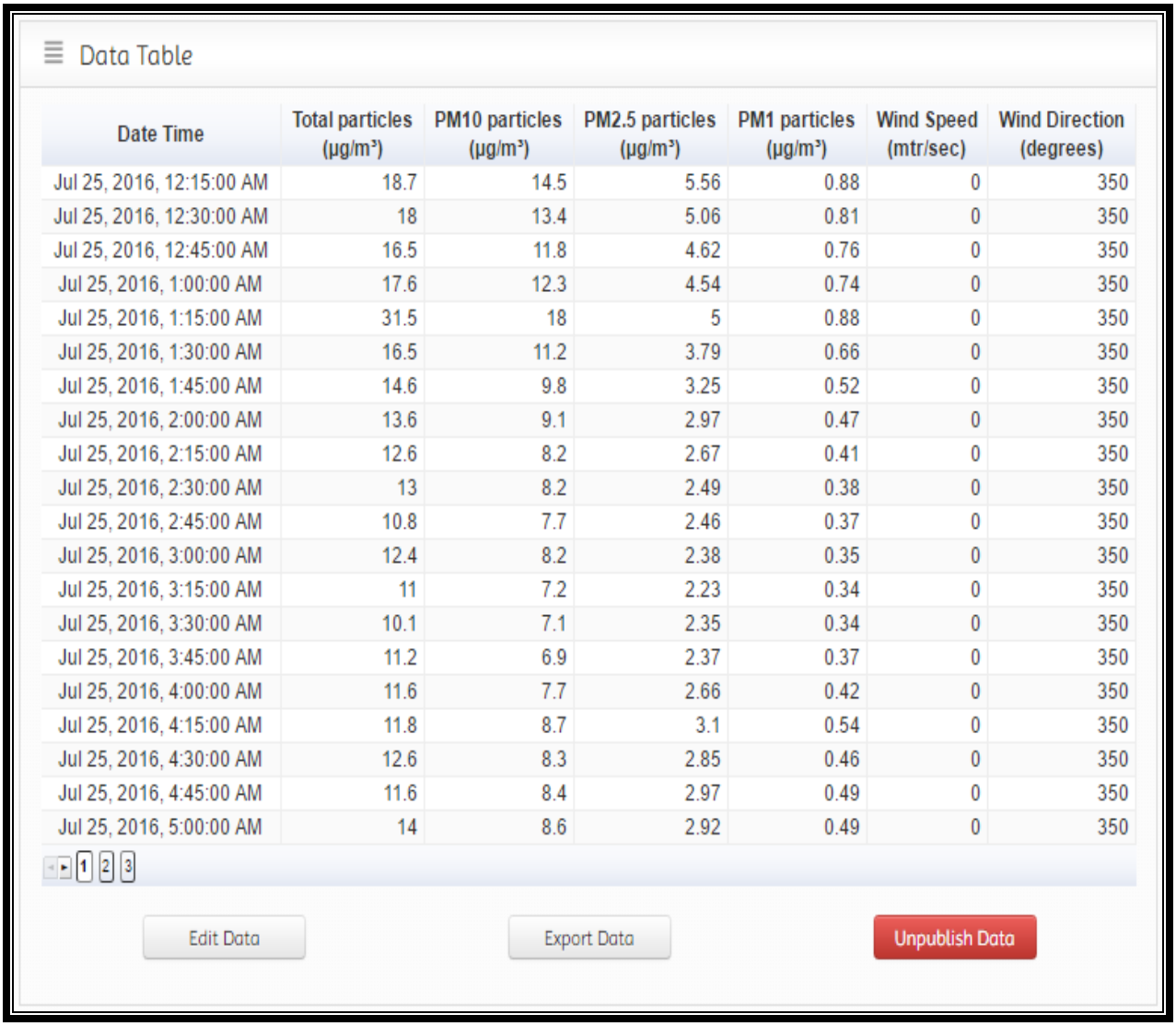
Figure 4.3

After you have selected the date(s) click the *Search* button. This will take you to the data visualization page where you can analyze the data for the selected dates in a data table and graphs as shown in figure 4.4 – 4.6.

The page shows **Data** on the left-hand side and **Line chart** on the right-hand side**.**

4.1.3 Data Table

Under the **Data Table** section, you have a table chart with the selected data in it. The data table shows 20 rows per page, at the bottom left corner of the table, there are page-forward and page-back buttons and the buttons with page number to jump to the desired page (as shown in figure 4.4). Clicking on these buttons will perform the paging operation and change the displayed page. You can also sort the table in ascending or descending orders by any column by clicking the title of the column you want to sort. You have 3 buttons named as *Edit Data*, *Export Data* and *Publish Data* (below the data table chart (as shown in figure 4.4). *Export Data* will generate an excel file for the selected data which you can download to your computer. *Publish Data* option will copy the data into public database which will be shown on the map on the main page. *Edit Data* option will be explained in section 4.1.7.



Date Time	Total particles (µg/m³)	PM10 particles (µg/m³)	PM2.5 particles (µg/m³)	PM1 particles (µg/m³)	Wind Speed (mtr/sec)	Wind Direction (degrees)
Jul 25, 2016, 12:15:00 AM	18.7	14.5	5.56	0.88	0	350
Jul 25, 2016, 12:30:00 AM	18	13.4	5.06	0.81	0	350
Jul 25, 2016, 12:45:00 AM	16.5	11.8	4.62	0.76	0	350
Jul 25, 2016, 1:00:00 AM	17.6	12.3	4.54	0.74	0	350
Jul 25, 2016, 1:15:00 AM	31.5	18	5	0.88	0	350
Jul 25, 2016, 1:30:00 AM	16.5	11.2	3.79	0.66	0	350
Jul 25, 2016, 1:45:00 AM	14.6	9.8	3.25	0.52	0	350
Jul 25, 2016, 2:00:00 AM	13.6	9.1	2.97	0.47	0	350
Jul 25, 2016, 2:15:00 AM	12.6	8.2	2.67	0.41	0	350
Jul 25, 2016, 2:30:00 AM	13	8.2	2.49	0.38	0	350
Jul 25, 2016, 2:45:00 AM	10.8	7.7	2.46	0.37	0	350
Jul 25, 2016, 3:00:00 AM	12.4	8.2	2.38	0.35	0	350
Jul 25, 2016, 3:15:00 AM	11	7.2	2.23	0.34	0	350
Jul 25, 2016, 3:30:00 AM	10.1	7.1	2.35	0.34	0	350
Jul 25, 2016, 3:45:00 AM	11.2	6.9	2.37	0.37	0	350
Jul 25, 2016, 4:00:00 AM	11.6	7.7	2.66	0.42	0	350
Jul 25, 2016, 4:15:00 AM	11.8	8.7	3.1	0.54	0	350
Jul 25, 2016, 4:30:00 AM	12.6	8.3	2.85	0.46	0	350
Jul 25, 2016, 4:45:00 AM	11.6	8.4	2.97	0.49	0	350
Jul 25, 2016, 5:00:00 AM	14	8.6	2.92	0.49	0	350

Figure 4.4

4.1.4 Data Graph

The **Data Graph** section shows a line chart with all the channels in it.

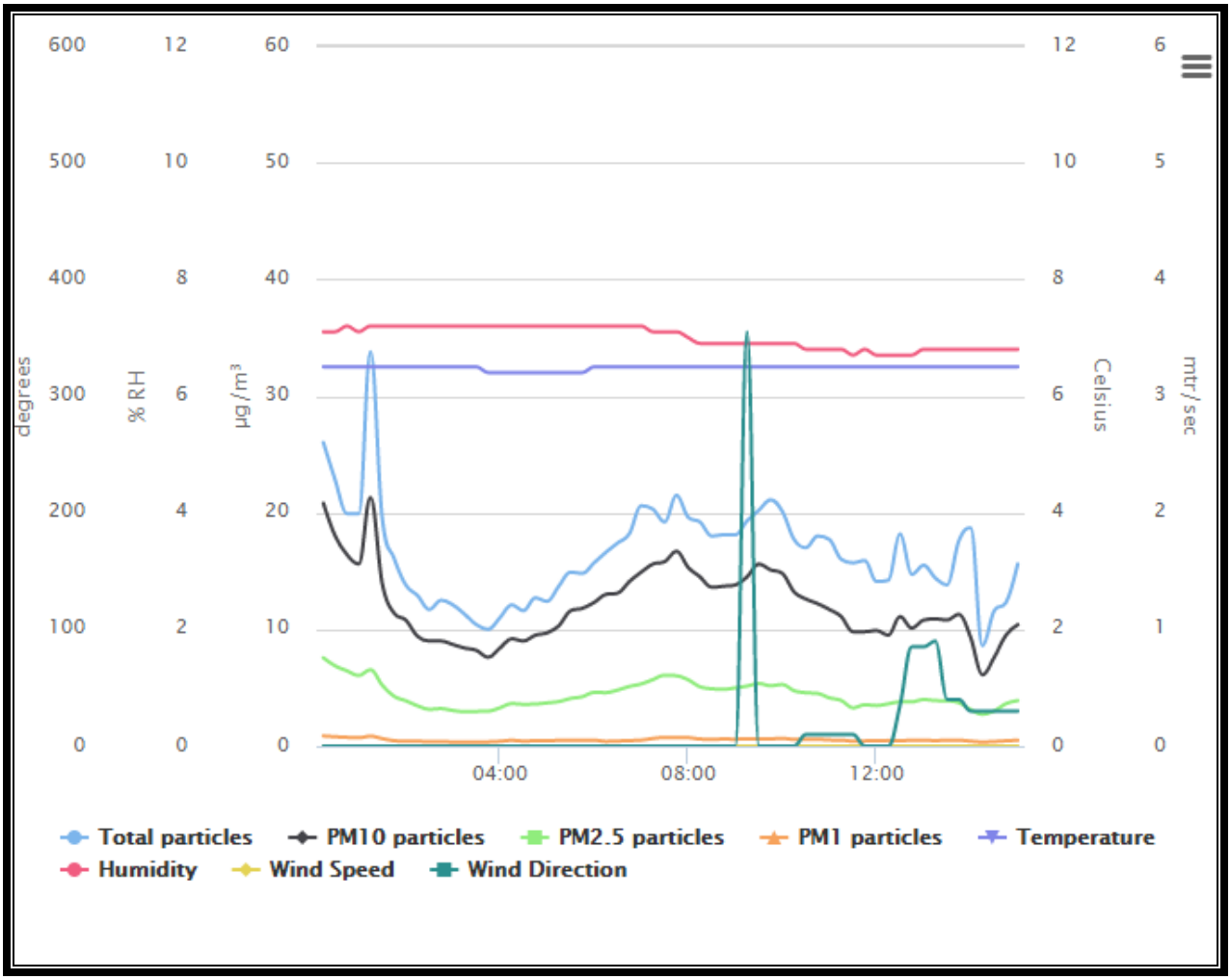


Figure 4.5

Figure 4.5 shows the line chart for all the data with multiple vertical axes. The values are plot against date/Time on the horizontal axis. The chart is dynamic and very interactive, you can select/deselect values to show/hide on the chart by clicking on the Parameter name. Zoom in on a chart to examine an interesting part of the data more closely by click + hold + drag. Export the chart to PNG, JPG, PDF or SVG format, or print the chart directly from the web page.

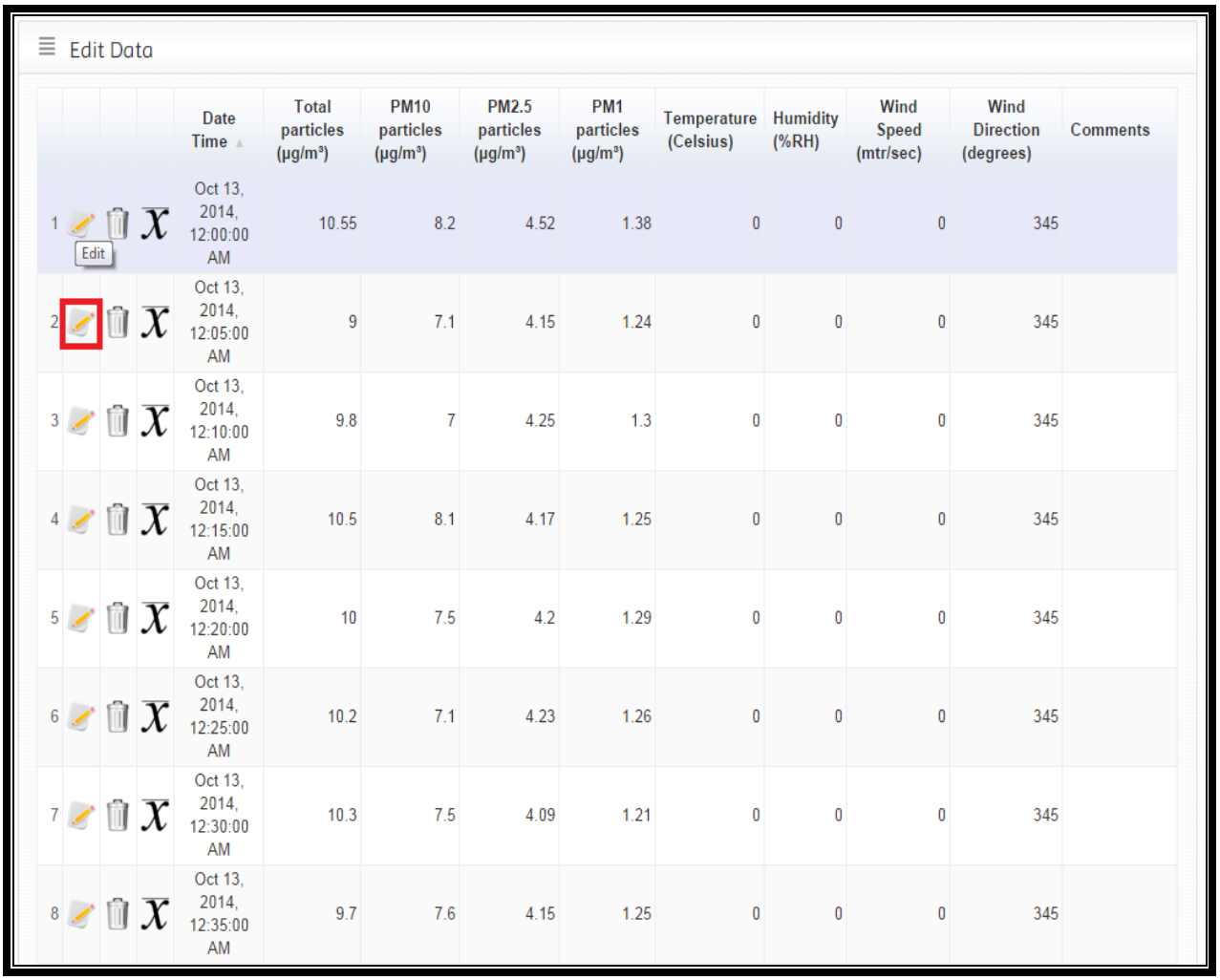
4.1.5 Polar & Windrose Charts

Polar Charts are the plot for dust particle measures against the wind Direction. This shows what the wind direction was when the particular level of particulates was measured. 'Average polar' chart shows the average values of the particulates for each wind direction. Polar charts and wind rose chart are shown in figure 4.6

Figure 4.5

4.1.6 Edit Data

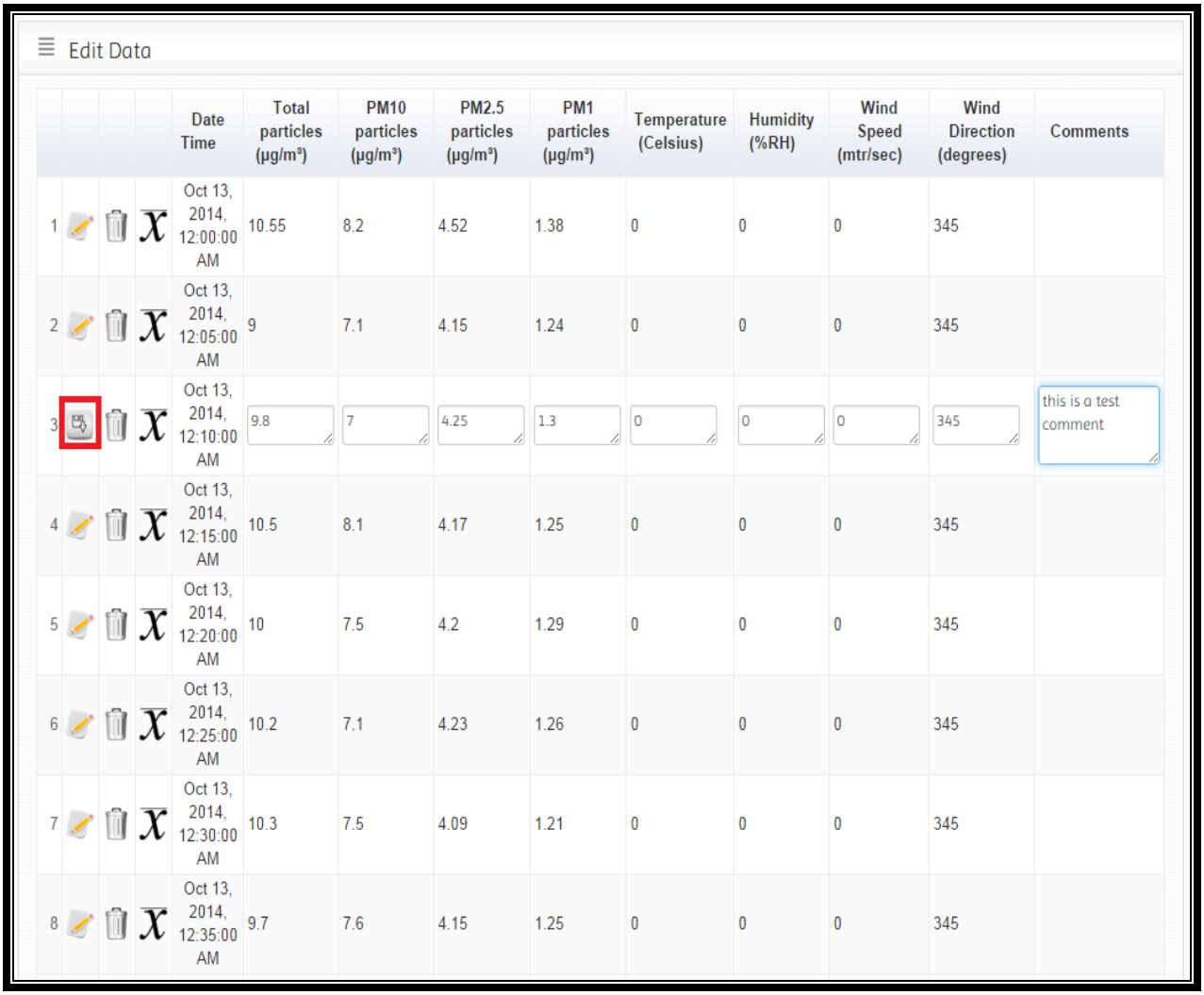
Edit Data option allows you to change or delete the data values manually. In case there is a value which does not seem to be correct, you can use this option to edit or delete the value by yourself. Clicking *Edit Data* button will display the edit data page as shown in figure 4.7



	Date Time	Total particles (µg/m³)	PM10 particles (µg/m³)	PM2.5 particles (µg/m³)	PM1 particles (µg/m³)	Temperature (Celsius)	Humidity (%RH)	Wind Speed (mtr/sec)	Wind Direction (degrees)	Comments
1	Oct 13, 2014, 12:00:00 AM	10.55	8.2	4.52	1.38	0	0	0	345	
2	Oct 13, 2014, 12:05:00 AM	9	7.1	4.15	1.24	0	0	0	345	
3	Oct 13, 2014, 12:10:00 AM	9.8	7	4.25	1.3	0	0	0	345	
4	Oct 13, 2014, 12:15:00 AM	10.5	8.1	4.17	1.25	0	0	0	345	
5	Oct 13, 2014, 12:20:00 AM	10	7.5	4.2	1.29	0	0	0	345	
6	Oct 13, 2014, 12:25:00 AM	10.2	7.1	4.23	1.26	0	0	0	345	
7	Oct 13, 2014, 12:30:00 AM	10.3	7.5	4.09	1.21	0	0	0	345	
8	Oct 13, 2014, 12:35:00 AM	9.7	7.6	4.15	1.25	0	0	0	345	

Figure 4.7

This page contains a data table with three buttons on the left for each row named as *Edit*, *Delete*, *Set to Avg*. This data table shows 20 rows per page. You can always navigate to other pages and sort the table by any column. *Set to Avg* button sets the whole row to the average values of the selected data. *Edit* button allows you to edit the values manually as shown in the figure 4.8



	Date Time	Total particles (µg/m³)	PM10 particles (µg/m³)	PM2.5 particles (µg/m³)	PM1 particles (µg/m³)	Temperature (Celsius)	Humidity (%RH)	Wind Speed (mtr/sec)	Wind Direction (degrees)	Comments
1	Oct 13, 2014, 12:00:00 AM	10.55	8.2	4.52	1.38	0	0	0	345	
2	Oct 13, 2014, 12:05:00 AM	9	7.1	4.15	1.24	0	0	0	345	
3	Oct 13, 2014, 12:10:00 AM	9.8	7	4.25	1.3	0	0	0	345	this is a test comment
4	Oct 13, 2014, 12:15:00 AM	10.5	8.1	4.17	1.25	0	0	0	345	
5	Oct 13, 2014, 12:20:00 AM	10	7.5	4.2	1.29	0	0	0	345	
6	Oct 13, 2014, 12:25:00 AM	10.2	7.1	4.23	1.26	0	0	0	345	
7	Oct 13, 2014, 12:30:00 AM	10.3	7.5	4.09	1.21	0	0	0	345	
8	Oct 13, 2014, 12:35:00 AM	9.7	7.6	4.15	1.25	0	0	0	345	

Figure 4.8

You can enter any numeric value in the text area for the channels and you can also add a comment for every edited row to show the comments in the reports. For instance, if there is a spike in the data due to the weather conditions you can add a comment (i.e. false values due to weather conditions) to that spike. Click the *Save* button (highlighted in the figure 4.8) to update the values in the database. Remember all the edited values will be highlighted in the table next time you view them. When you click the *Delete* button it asks you to confirm if you want to delete the sample, when you click OK the whole row is deleted from the database.

4.2 Instrument Comparison

When you click on the instrument comparison option in the left menu list as shown in the figure 4.9,

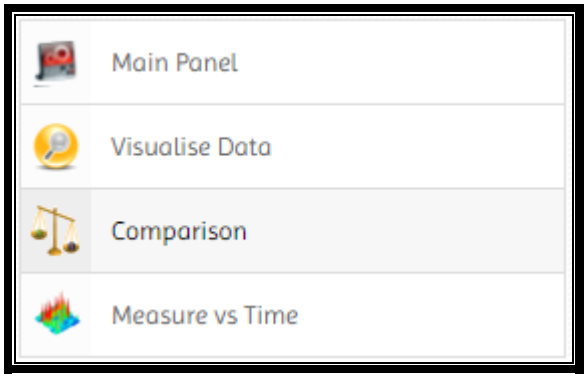


Figure 4.9

You will be directed to a page where you can select two instruments and the date and time for the selected instruments to compare the data as shown in the figure 4.10.

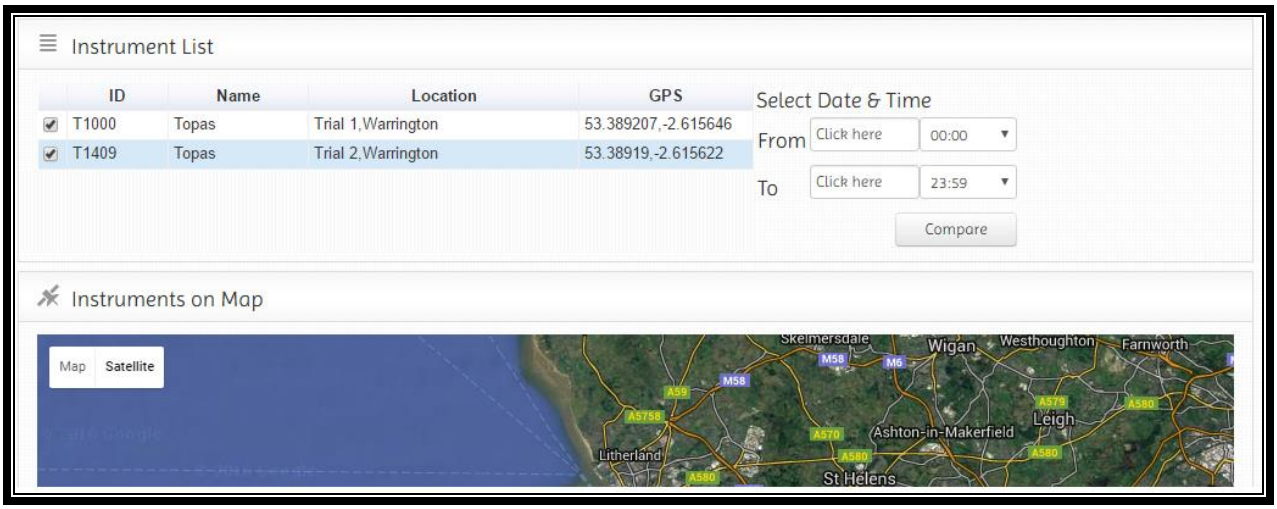


Figure 4.10

The page shows the instrument list with the checkboxes on the left-hand side. You can select two instruments for comparison. You can also see the instruments on the map. Select the date from the calendar and time from the drop-down menu and click on the *Compare* button to compare the data from the selected instruments. This will take you to the comparison page where you can visualize the comparison data on the line charts as shown in figure 4.11

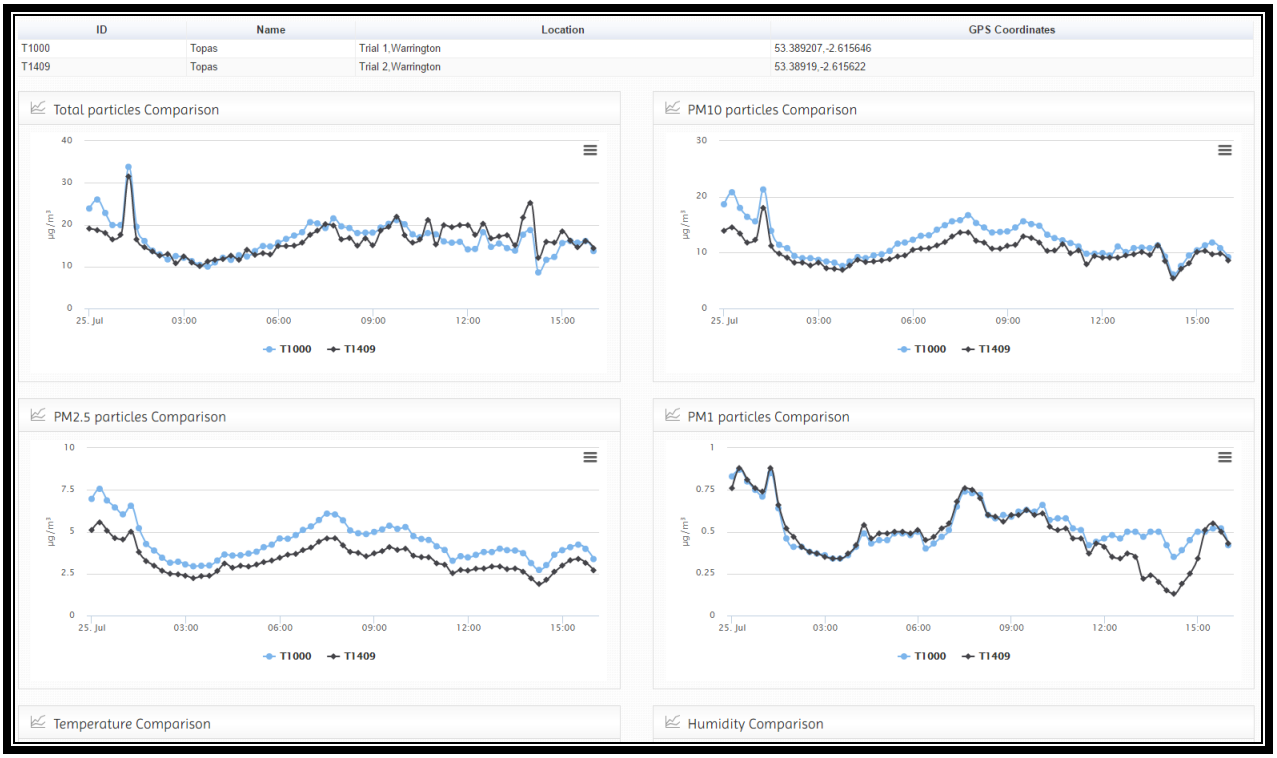


Figure 4.11

On top of the comparison page, you can see the details of the selected instruments. The comparison is performed for each channel and displayed in the line chart.

4.3 Measure vs. Time

When you on click the Measure vs. Time icon in the control panel as shown in the figure 4.12

Figure 4.12

You will see the instruments selection page which allows you to select an instrument, a channel, date range and a time interval to plot a 3D graph of the selected channel as shown in the figure 4.13.

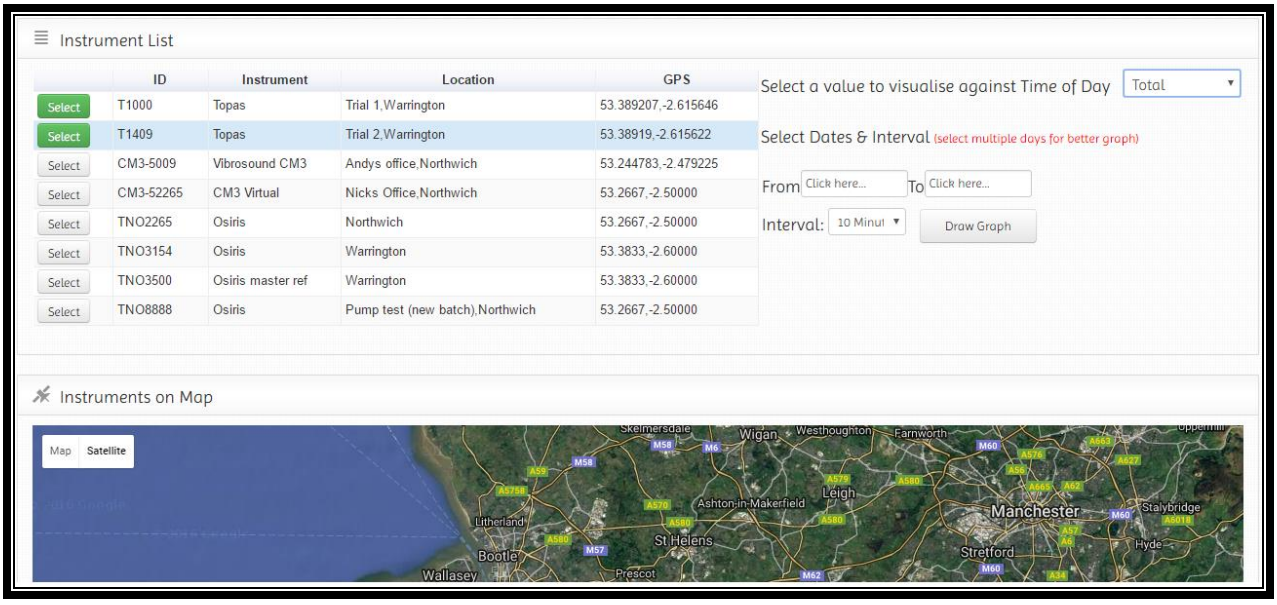


Figure 4.13

You can select an instrument from the table; when you click the ***Select*** button it shows you the input boxes to select channels and the date range. Clicking the ***Draw graph*** button as shown in figure 4.13 will generate 3D graph and a magic table as shown in figure 4.14 and 4.15

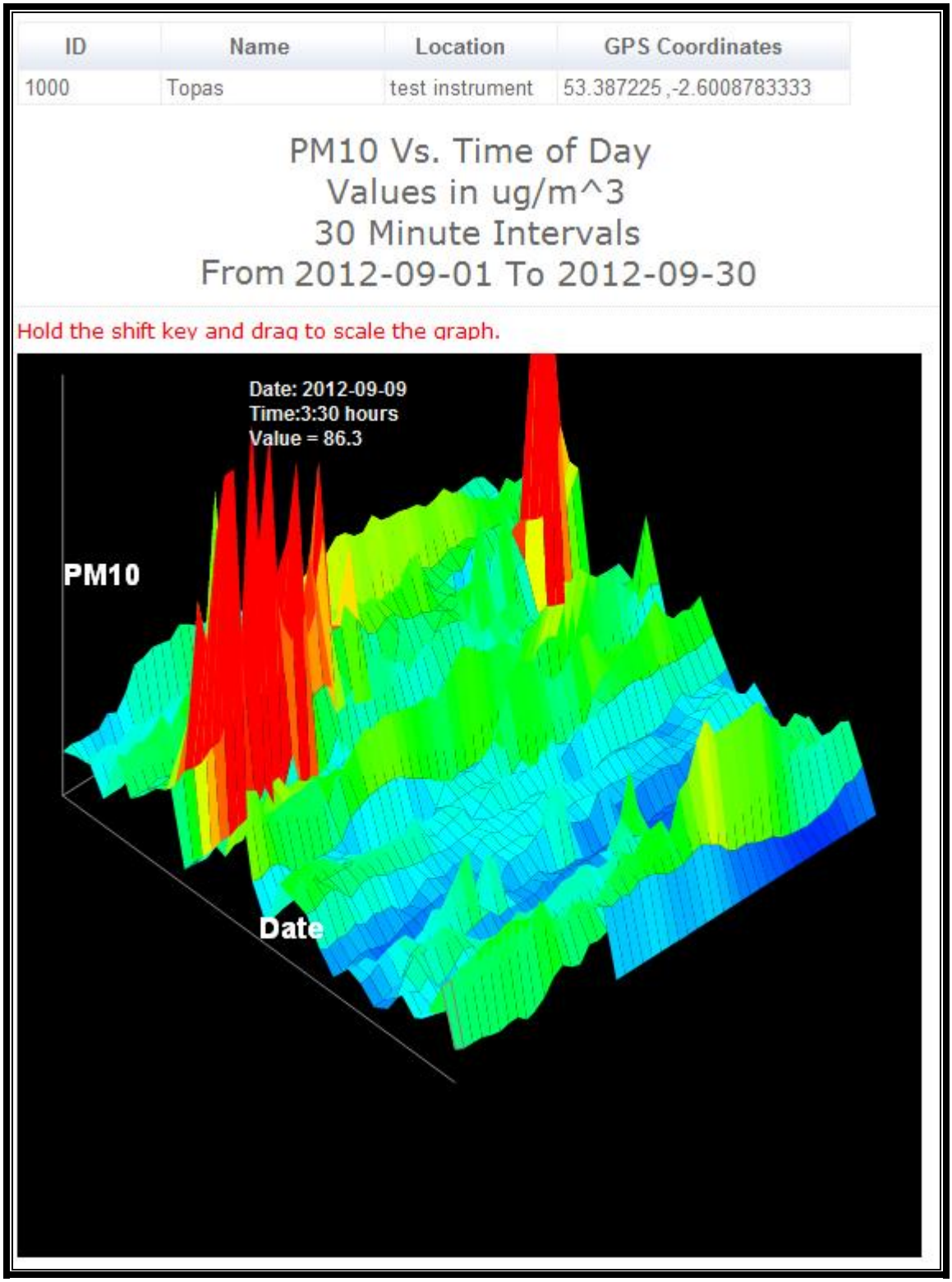

ID
Name
Location
GPS Coordinates
1000
Topas
test instrument
53.387225 ,-2.6008783333
PM10 Vs. Time of Day
Values in ug/m^3
30 Minute Intervals
From 2012-09-01 To 2012-09-30
Hold the shift key and drag to scale the graph.
Date: 2012-09-09
Time:3:30 hours
Value = 86.3
PM10
Date

Figure 4.14

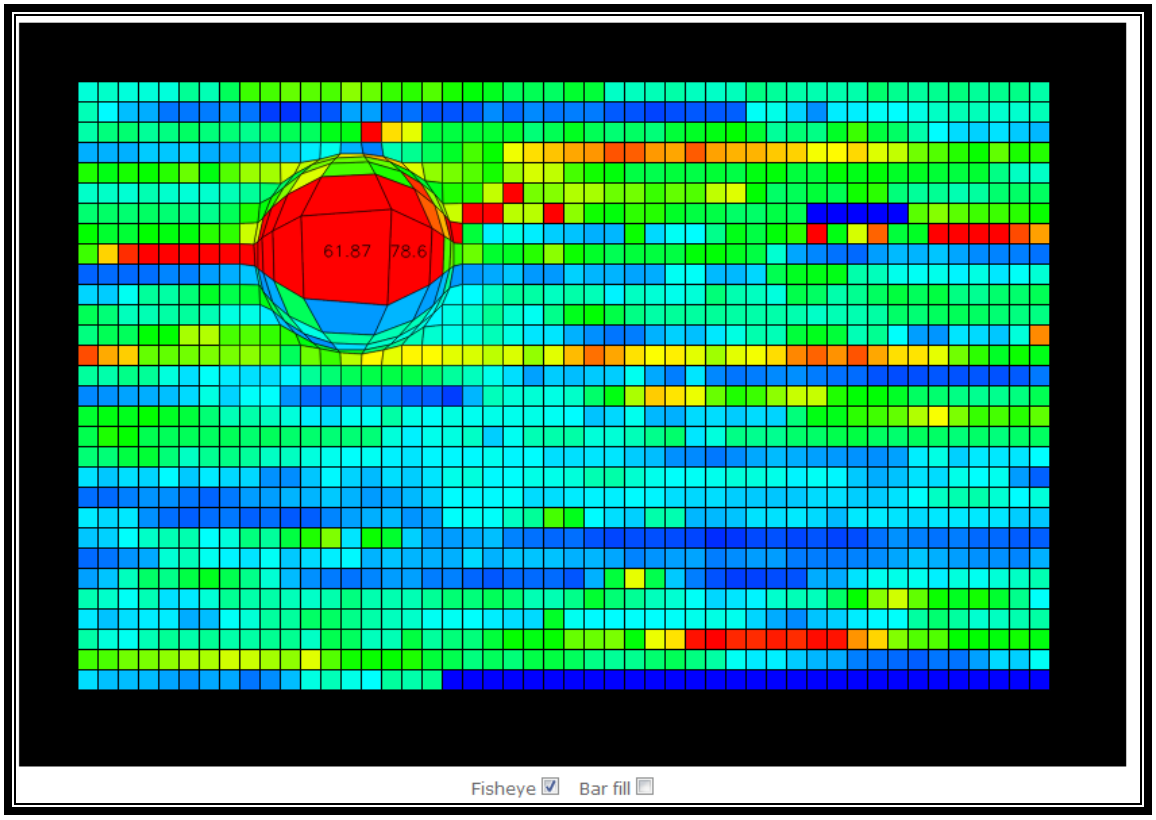


Figure 4.15 (a)

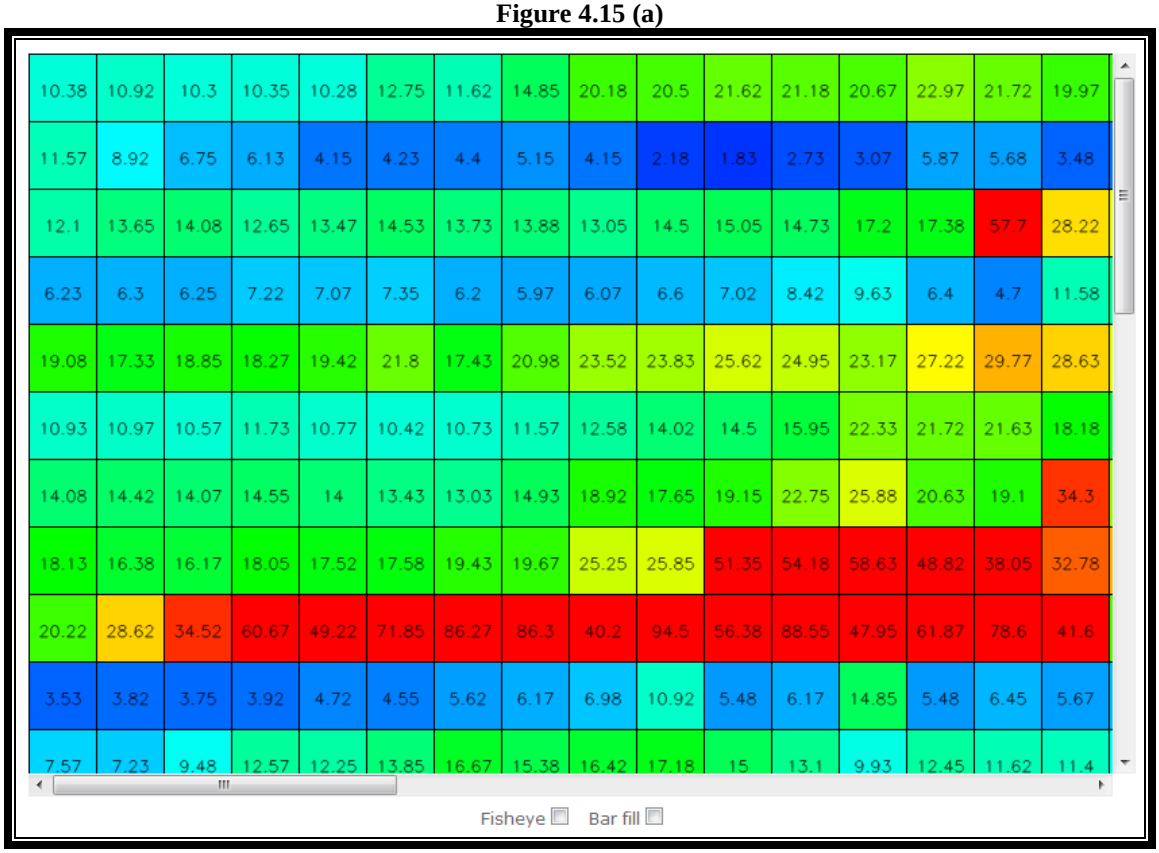


Figure 4.15 (b)

Figure 4.14 shows a 3D graph where one axis is for date and the other is for the time of the day, the vertical axis shows the values of the selected channel. In the above example, PM10 was selected with 30 minutes interval. On mouse hover, the graph displays the values of that point. You can change the view of the graph and also you can scale the graph by holding the shift key and dragging the mouse on the graph.
Figures 4.15 (a) and (b) show the magic table for the same values. You can change the view of the table by checking/unchecking the *Fisheye* and *Bar fill* checkboxes.

4.4 Auto Export Data

This option allows you to setup configurations to export the data and send it to the email address (es) automatically. When you click this option in the left menu it shows the list of the instruments after you select the instrument it shows you the options to setup auto data export as shown in the figure below.

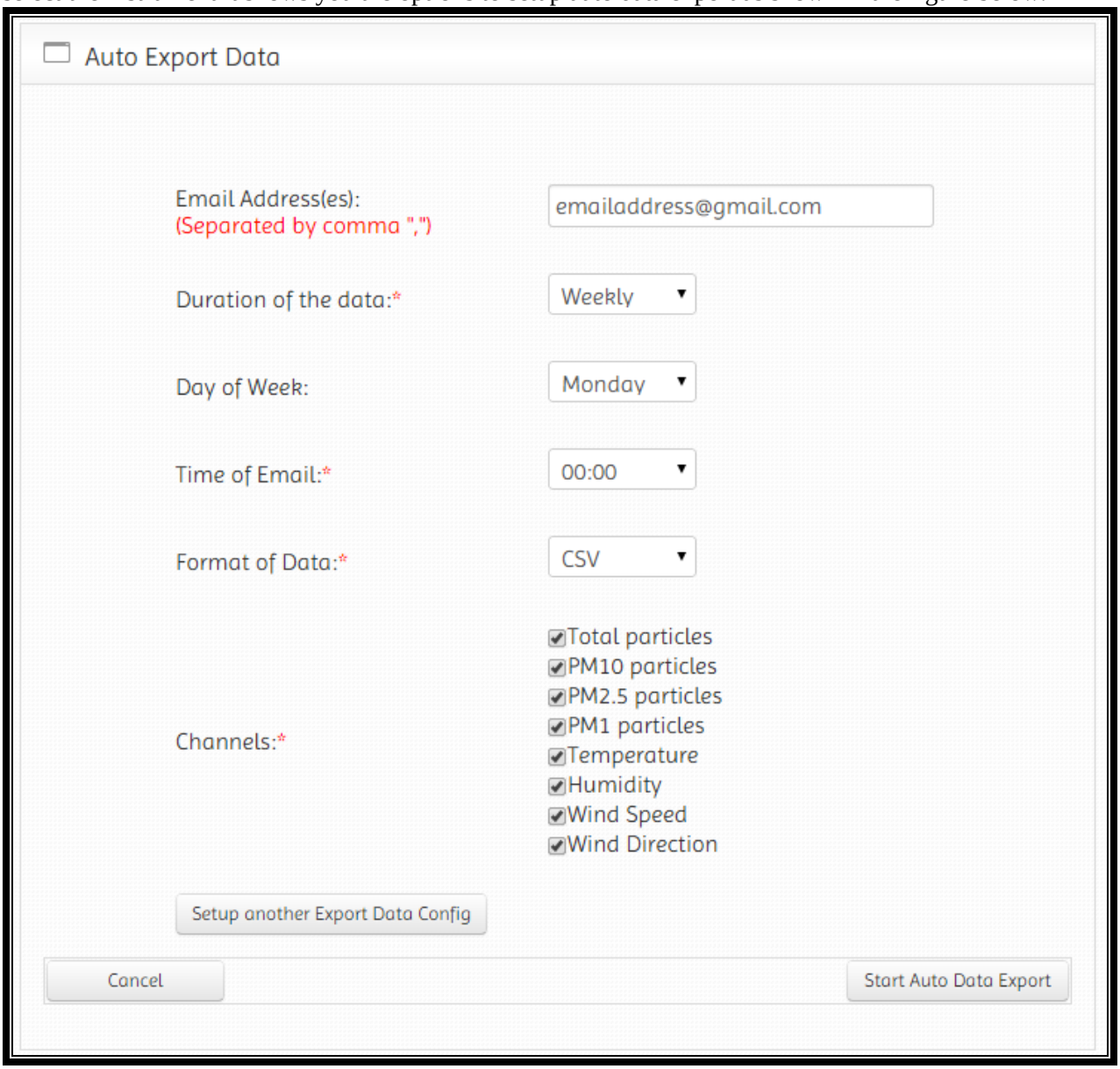


Figure 4.16

You can enter multiple email addresses separated by comma, select the duration of the data (i.e. Daily, Weekly, Monthly), select the day of the week (if weekly data), select the time of email, select the format of the data (i.e. PDF, Excel or CSV) and you can also select the channels you want to include in the exported file. The application allows you to setup up to 3 different configurations, for instance, you want daily data as well as weekly data as well as monthly or if you want data in all three different formats, you can select 3 different configurations.

4.5 Generate Report

Generate report option enables you to generate reports for the data from the instruments. When you click the option in the left menu as shown in the figure 4.17

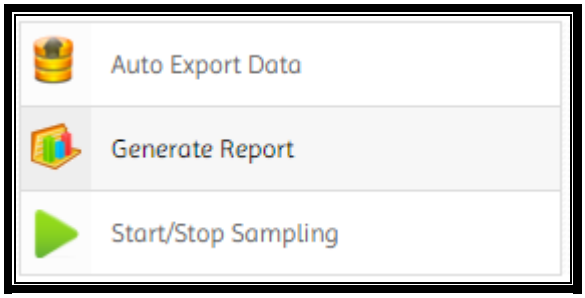


Figure 4.17

The application asks you to select an instrument as discussed in section 4.1.1 and then you can select the date(s) as discussed in section 4.1.2. After you have selected the dates for the report, the application asks you to select the channels you want to include in your report and their exceedance limits as shown in figure 4.18.

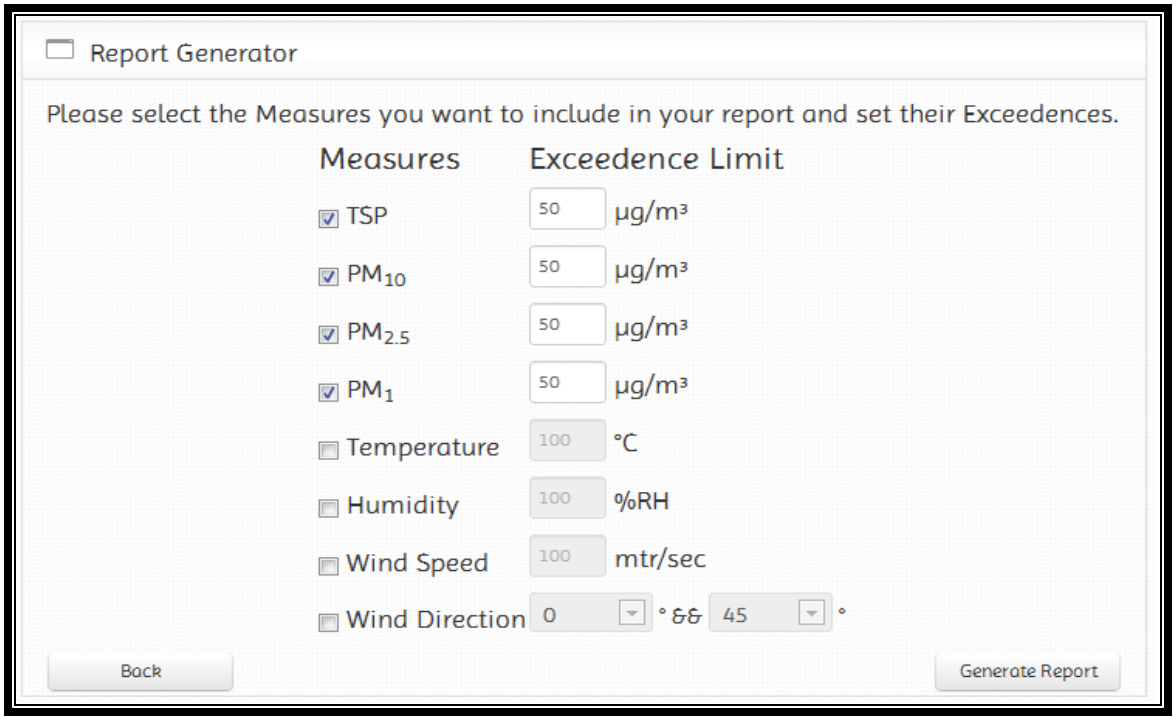


Figure 4.18

You can check/uncheck the channels you want to include in you report and set their exceedance limits. If the value is greater than exceedance limit it will be highlighted in the report. Click the *Generate Report* button to generate a report in PDF or MS Excel format.

4.6 Start/Stop Sampling

When you click the Start/Stop Sampling option in the left menu as shown in the figure below

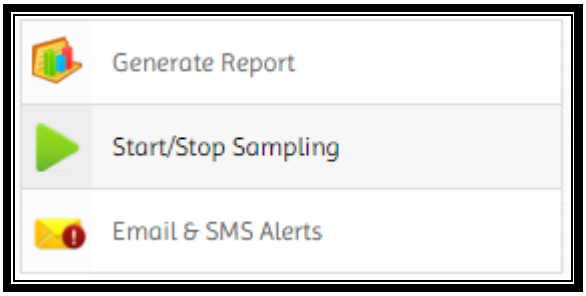


Figure 4.19

You will be shown a list of your instruments. You can select any instrument as discussed in section 4.1.1. After that, it displays start/stop sampling options as shown in figure 4.20.

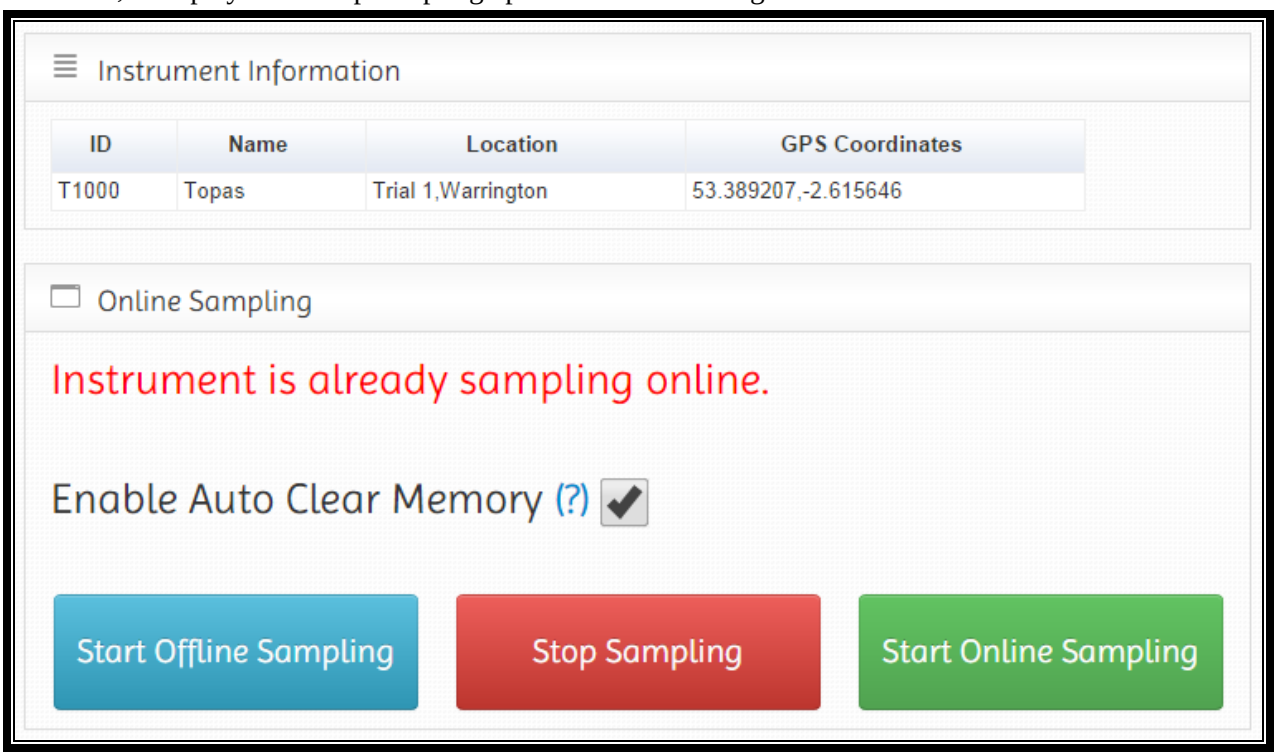


Figure 4.20

If the instrument is already sampling online or offline, the application shows the message on top of the page and a *Stop Sampling* button as well. You can start *Offline Sampling* or *Online Sampling*. There is also an option to 'Auto Clear memory', by default this option is enabled, if you do not want to clear the memory automatically you can uncheck this option. Starting offline sampling will stop online sampling.

4.7 Email & SMS Alerts

This option allows you to setup alarm configuration for the online sampling instrument. When you click this option in the left menu as shown in the figure below

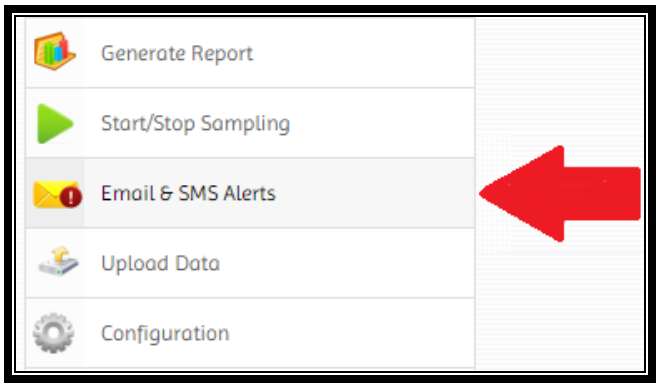


Figure 4.21

You will be asked to select the instrument you want to setup the configurations for. Instrumentscan be selected as discussed in section 4.1.1. After you have selected the instrument, it shows you the alarm configuration wizard with four tabs as shown in figure 4.22

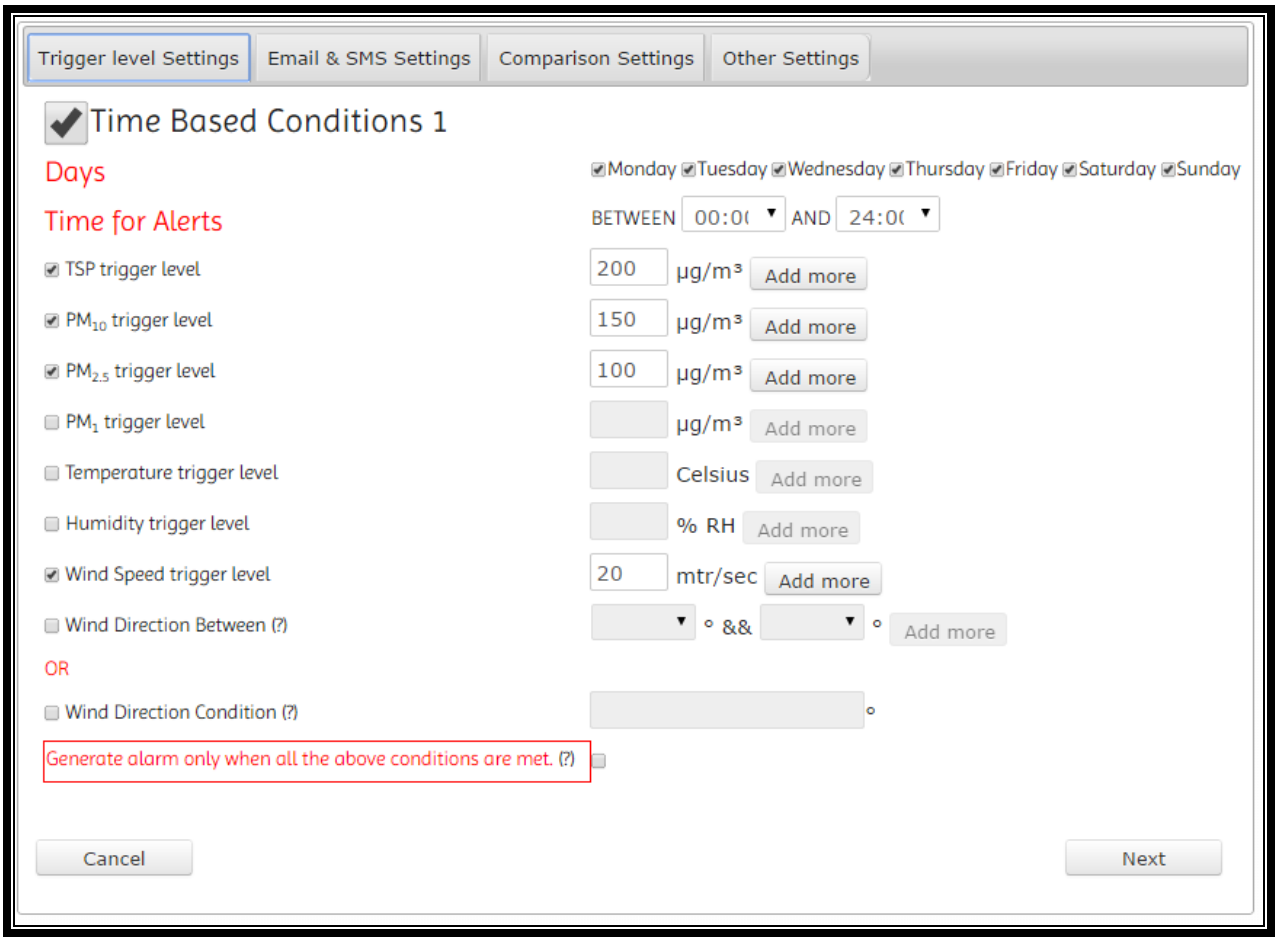


Figure 4.22

The first tab allows you to setup up to 3 conditions for the alerts. You can select multiple days and the hours of the day for the alerts. For instance, if you want alerts only Monday to Friday between 8 AM and 2 PM. You can set the trigger levels for the channels for which you want to generate the exceedance alarms. Multiple alert levels can be set i.e. Level 1 and level 2. If you want to generate alerts only when all the selected channels exceed the trigger values, you can check 'Generate alarm only when all the above conditions are met' option, leave this option unchecked if you want to generate alerts when any of the selected channel value exceeds the trigger value you have set. After you have finished setting up these conditions you can click the *Next* button which will take you to the Email & SMS Settings tab as shown in the figure 4.23.

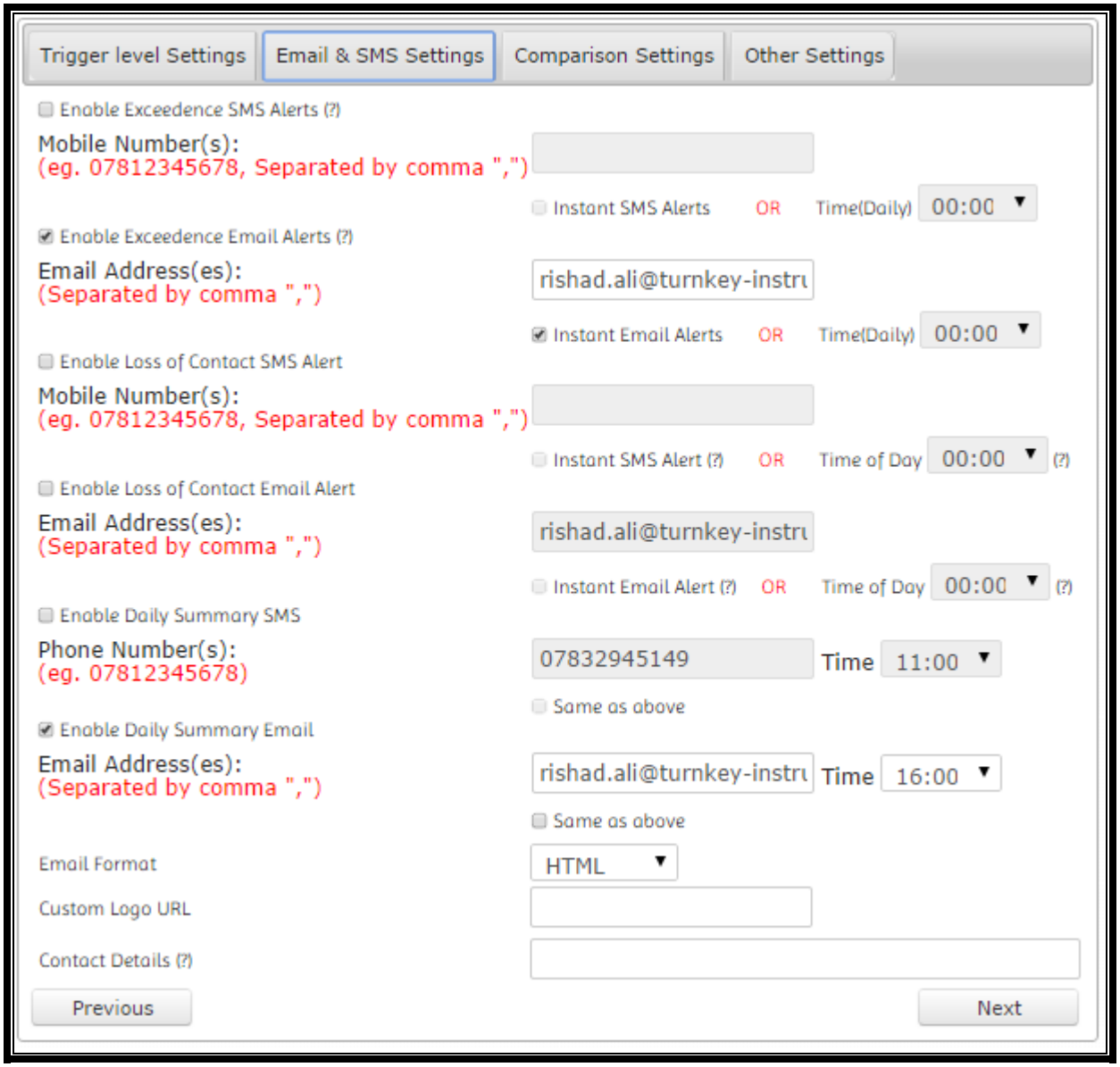


Figure 4.23

Here you can set SMS and email contact details and the conditions to generate the alerts. If you want to receive the email or SMS alerts as soon as the values exceed the trigger levels you have set in the

previous tab, you can check the 'Instant alert' option or if you do not want instant alerts you can select a time of the day from the drop down list to generate one email with all the notifications. You can select different email formats, HTML if you want to get emails in proper format with images and logos or plain text otherwise. If you want to include a logo of your company in the email alerts, you can enter the URL for the image logo. You can also enter the contact details of the concerned person in case of an exceedance to be included at the bottom of the email alerts. Once you are done setting up the contact details click the *Next* button to go to the Comparison Settings tab as shown in the figure below.

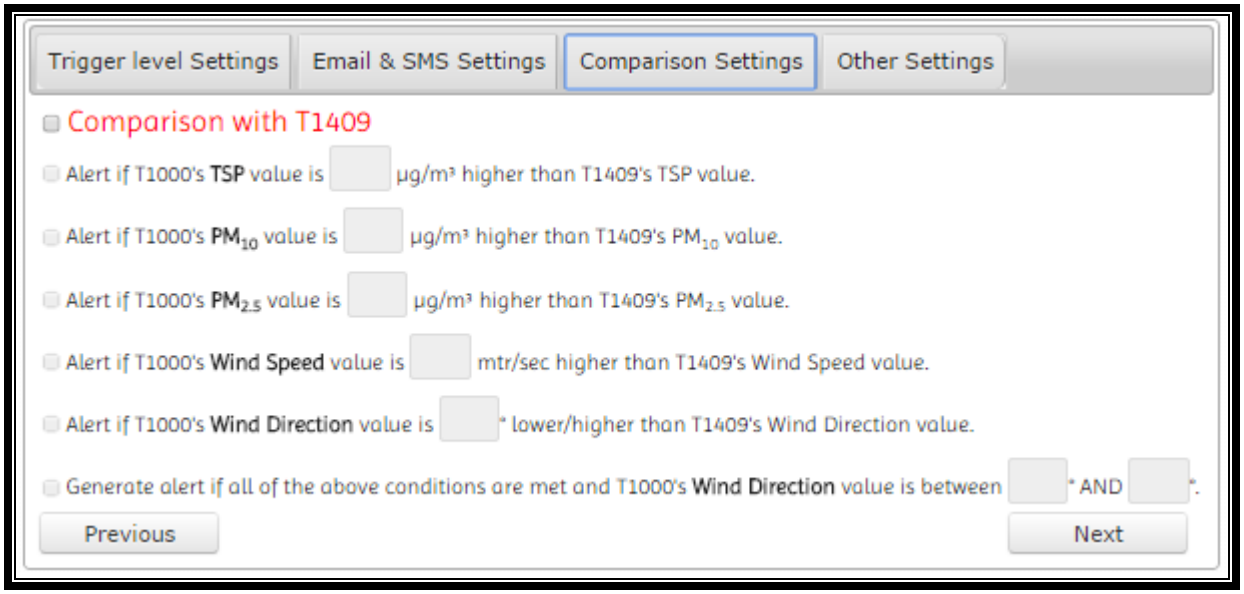


Figure 4.24

This tab allows you to setup the comparison alerts. For example, if you want to generate alerts if the channel 1 value of instrument ABC is x units greater than the channel 1 value of instrument XYZ, you can select the instrument by ticking the checkbox and set the values. If you do not want to compare instruments then just click next to go to the Other Settings tab as shown in figure 4.25.

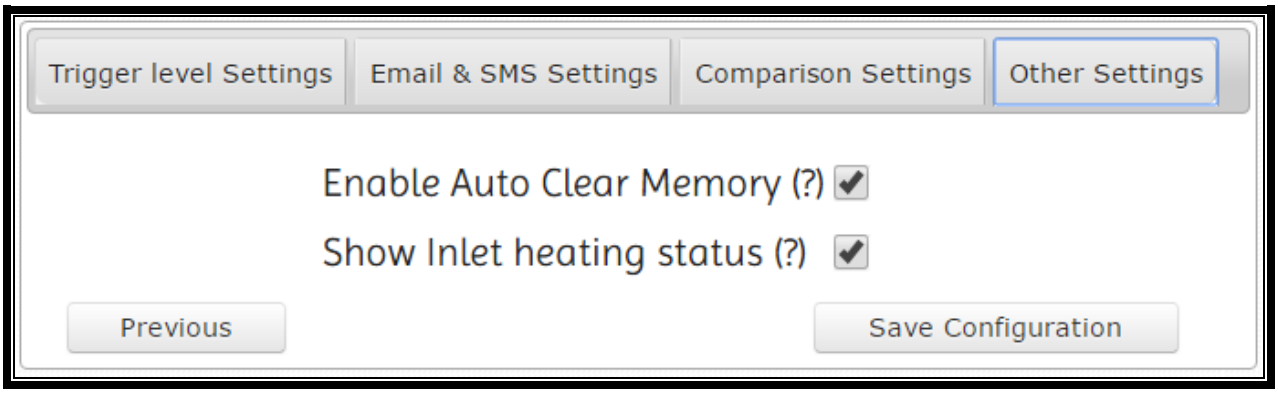


Figure 4.25

This tab gives you a checkbox for Display Reading Alerts. If the instrument is sampling with 15-minute storage interval but instrument's screen refresh time is 10 seconds and you want to get the alerts for the screen refresh values, you can check this option. Remember, the data will be stored according to the storage interval (i.e. 15 Minute in this example). After you have finished setting up, click the *Save*

Configuration button to save the alert configurations and start SMS and email alerts. The application shows you a confirmation message if the configuration is saved into the database successfully as shown in the figure below, otherwise, an error message will be displayed.

Figure 4.26

4.7.1 Email & SMS Alerts For Sound

If you have a sound meter attached to the dust monitoring instrument to monitor the sound pollution, you can configure AirQWeb to generate alerts based on Equivalent Continuous Sound Pressure Level (L_{eq}) or different Percentile levels (L_1 to L_{99}) for different time intervals. To Setup sound alerts, click on Email & SMS Alerts option in the left menu then select an instrument as described in the previous section.

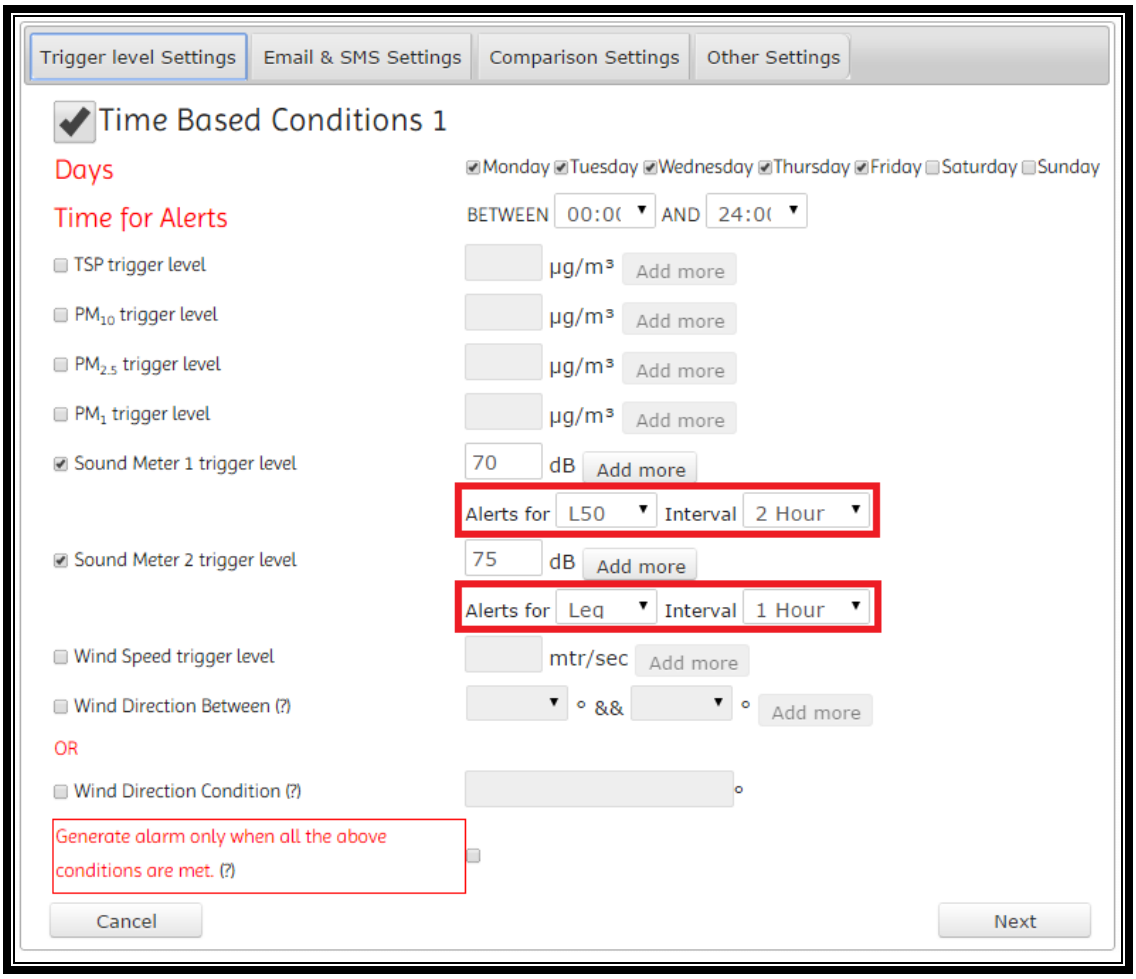


Figure 4.27

As shown in figure 4.27, you can set 'Sound Meter 1 trigger level' (i.e. 70 dB in this case), select 'Alerts for' from the drop-down list (L_{50}) and the interval (2 Hours). For each new data sample, AirQWeb will calculate L_{50} for 2 hours and generate an alert if the value of L_{50} is greater than 70 dB. AirQWeb allows you to configure sound alerts for L_{eq}, L_1, L_5, L_{10}, L_{25}, L_{50}, L_{75}, L_{90}, L_{99} for an interval of 15 Minute, 30 Minute, 1 Hour, 2 Hour, 4 Hour, 8 Hour, 12 Hour, 24 Hour.

4.8 Upload Data

Although the application uploads the data into the database automatically every 6 hours but this option enables you to upload the available samples from the memory of the instruments into the database manually. When you click the Upload Data option in the left menu, the application asks you to select an instrument from the list as discussed in section 4.1.1, after that the application shows you the available samples in the memory of the selected instrument as shown in figure 4.28.

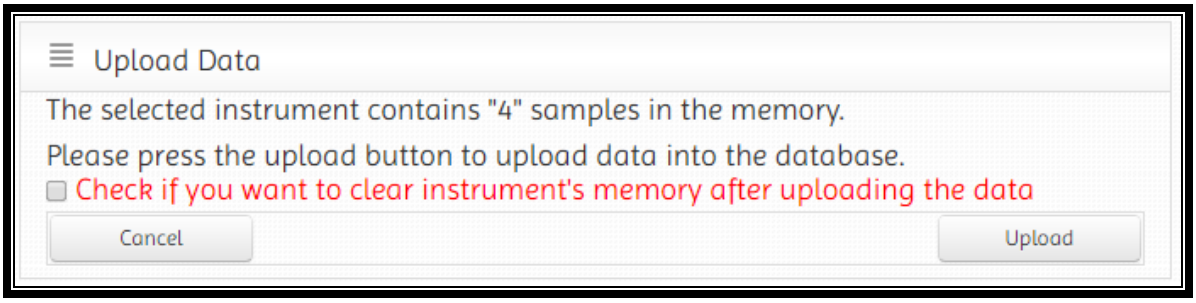


Figure 4.28

You can select the check box if you want to clear the instrument's memory after uploading the data. Click *Upload* button to upload the data into the database.

4.9 Configuration

This option shows you the current configuration of the selected instrument and enables you to change it. When you click the Configuration option in the left menu, you will be asked to select an instrument as discussed in section 4.1.1. Then you will be displayed the configuration of the selected instrument as shown in figure 4.29 (a) and 4.29 (b).

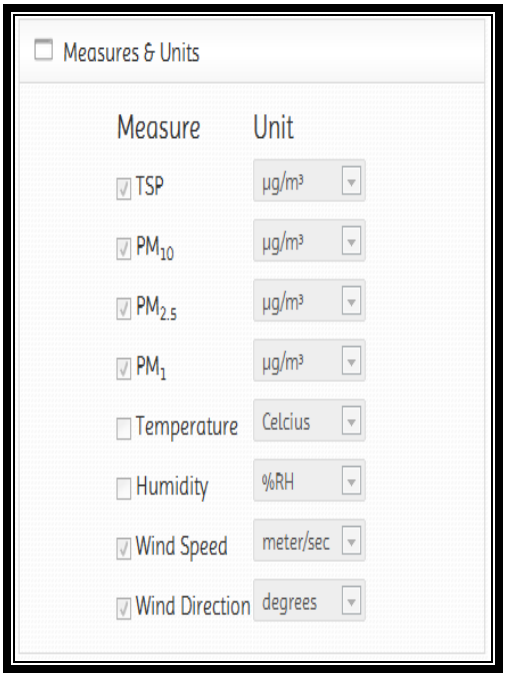


Figure 4.29 (a)

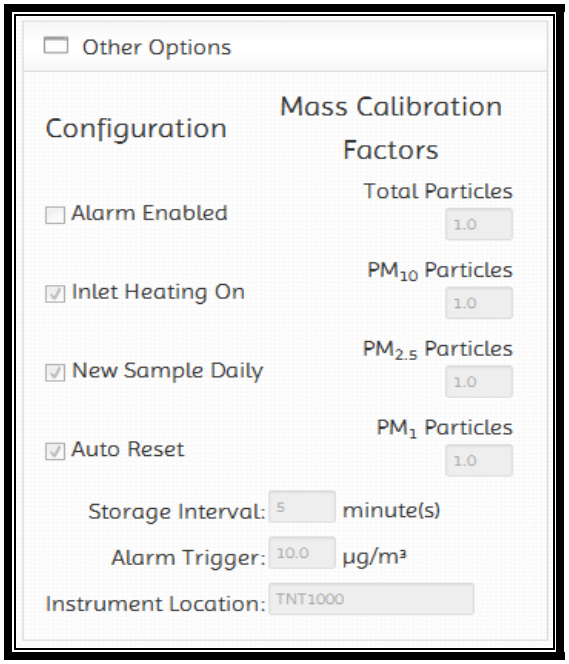


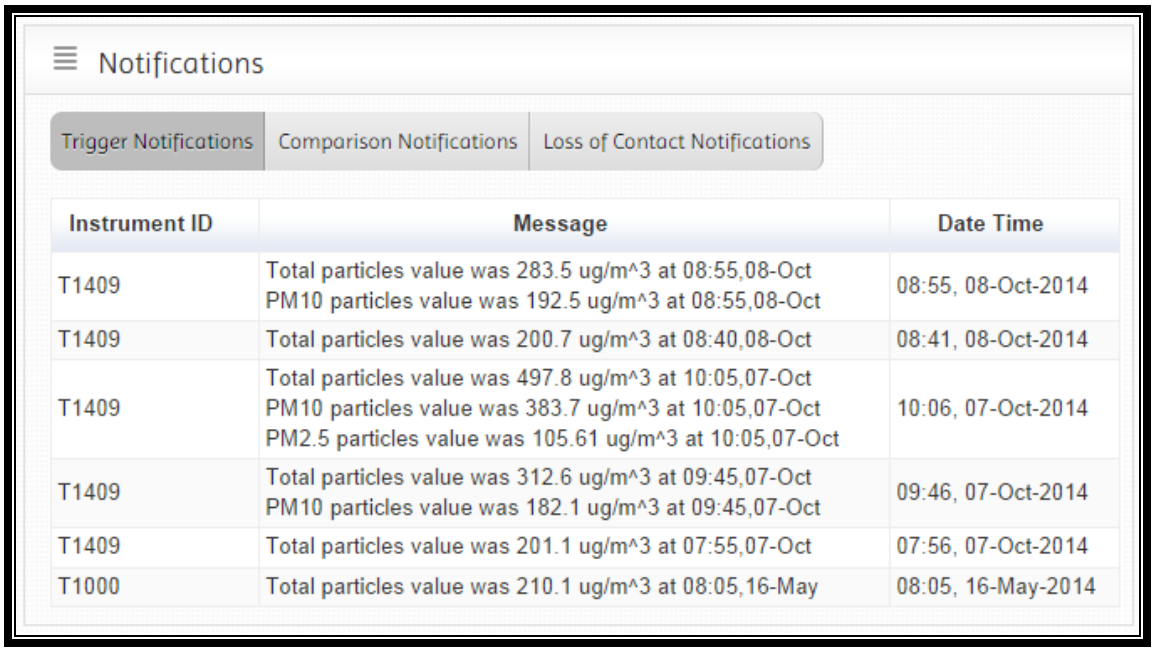
Figure 4.29(b)

The configuration page contains two tabs named as **Measure & Units** and **Other Options**. If the instrument is sampling, you are not allowed to change the configuration so you will have to stop sampling first. The application shows a message on top of the page and a *Stop Sampling* button to stop the instrument for sampling at the bottom right of the page. When you stop the instrument you will be allowed to change the configuration of the instrument. The figures above show the options to select the channels and their units and other configurations of the instrument that can be changed. When you are done changing the configuration, click the *Apply* button to update the configuration of the instrument. The application shows a confirmation message after it finishes the update operation as shown in the figure below.

Figure 4.30

4.10 Notifications

Click the 'Notifications' option in the left menu, to see the latest notifications in the table charts as shown in the figures below.



Instrument ID	Message	Date Time
T1409	Total particles value was 283.5 ug/m^3 at 08:55,08-Oct PM10 particles value was 192.5 ug/m^3 at 08:55,08-Oct	08:55, 08-Oct-2014
T1409	Total particles value was 200.7 ug/m^3 at 08:40,08-Oct	08:41, 08-Oct-2014
T1409	Total particles value was 497.8 ug/m^3 at 10:05,07-Oct PM10 particles value was 383.7 ug/m^3 at 10:05,07-Oct PM2.5 particles value was 105.61 ug/m^3 at 10:05,07-Oct	10:06, 07-Oct-2014
T1409	Total particles value was 312.6 ug/m^3 at 09:45,07-Oct PM10 particles value was 182.1 ug/m^3 at 09:45,07-Oct	09:46, 07-Oct-2014
T1409	Total particles value was 201.1 ug/m^3 at 07:55,07-Oct	07:56, 07-Oct-2014
T1000	Total particles value was 210.1 ug/m^3 at 08:05,16-May	08:05, 16-May-2014

Figure 4.31

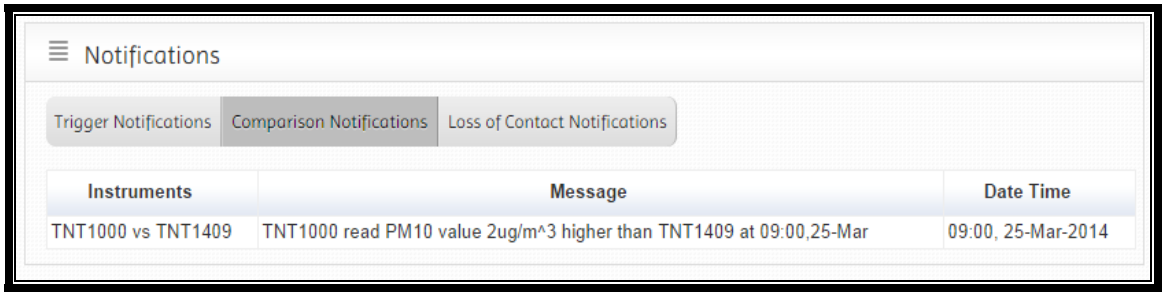


Figure 4.32

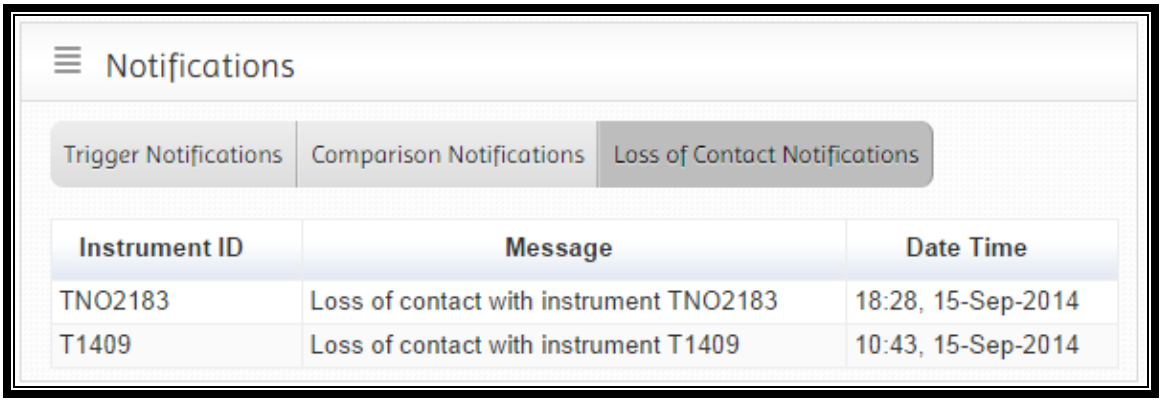


Figure 4.33

Trigger notifications tab shows the latest exceedance notification from all the instruments registered on your account. Similarly comparison and loss of contact notification show notifications from all the registered instruments sorted by date time in descending order.

4.11 Additional Features

The are some advanced features in AirQWeb which can be very useful but are not very popular hence they have been put in a sub menu under 'Additional Feature'. Hover over the mouse to open the sub menu of addition features as shown in the figure 4.34

4.11.1 Sound Stats

When you click the Sound Stats option in the sub menu of Additional Features as shown in the figure 4.34

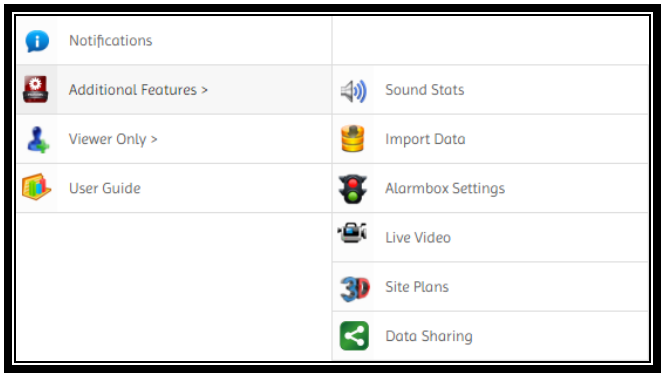


Figure 4.34

AirQWeb shows you the list of your instruments where you can select an instrument as described in 4.1.1, then you will be asked to select the dates and interval for which you want the sound statistics.

4.11.1.1 Sound Date/Time Selection

This page allows you to select the date and time for the sound data and the interval to generate the sound stats as shown in figure 4.35

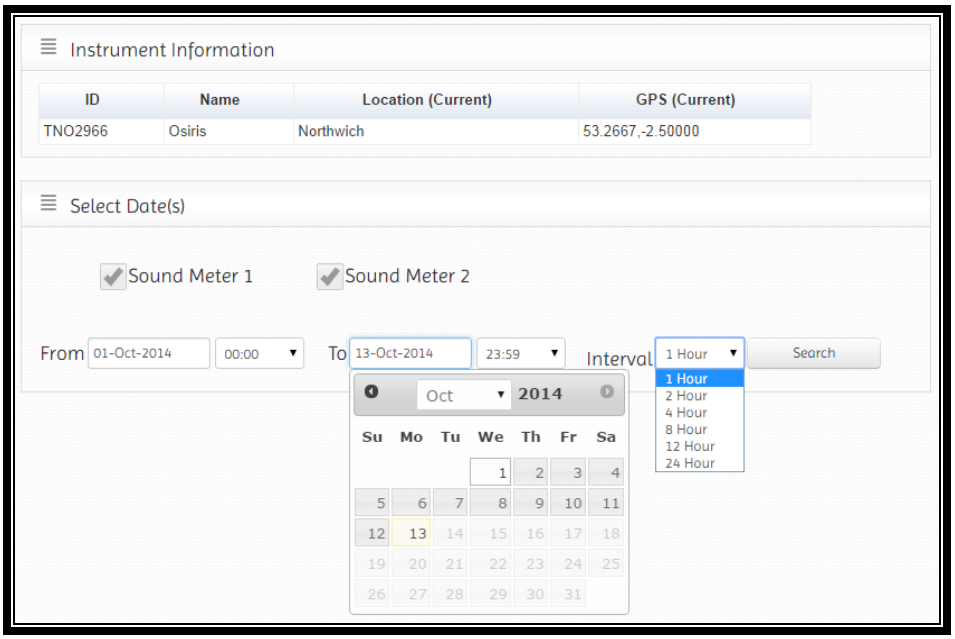
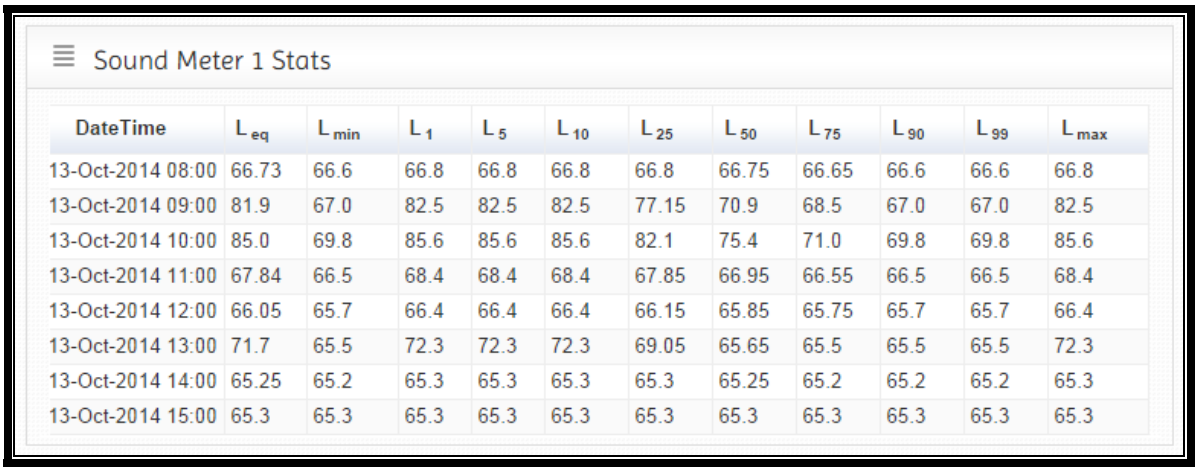


Figure 4.35

After you have selected the date, time and the interval value for the sound statistics, click the *Search* button to collect the sound data from the database and calculate the average values. If the sound data is not available an error message will be displayed that 'There is no sound data available. Please select other dates.'

4.11.1.2 Sound Statistics

If the data is available the application shows the sound statistics as shown in the figure below.



DateTime	L_{eq}	L_{min}	L_1	L_5	L_{10}	L_{25}	L_{50}	L_{75}	L_{90}	L_{99}	L_{max}
13-Oct-2014 08:00	66.73	66.6	66.8	66.8	66.8	66.8	66.75	66.65	66.6	66.6	66.8
13-Oct-2014 09:00	81.9	67.0	82.5	82.5	82.5	77.15	70.9	68.5	67.0	67.0	82.5
13-Oct-2014 10:00	85.0	69.8	85.6	85.6	85.6	82.1	75.4	71.0	69.8	69.8	85.6
13-Oct-2014 11:00	67.84	66.5	68.4	68.4	68.4	67.85	66.95	66.55	66.5	66.5	68.4
13-Oct-2014 12:00	66.05	65.7	66.4	66.4	66.4	66.15	65.85	65.75	65.7	65.7	66.4
13-Oct-2014 13:00	71.7	65.5	72.3	72.3	72.3	69.05	65.65	65.5	65.5	65.5	72.3
13-Oct-2014 14:00	65.25	65.2	65.3	65.3	65.3	65.3	65.25	65.2	65.2	65.2	65.3
13-Oct-2014 15:00	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3

Figure 4.36

For each sound meter, it calculates L_{eq}, L_{min}, L_1, L_5, L_{10}, L_{25}, L_{50}, L_{75}, L_{90}, L_{99} and L_{max} from the sound data for the selected interval and shows these values in the data table. It also plots a line chart for the sound data and $L_{eq}/L_{10}/L_{50}/L_{90}$ (you can select the radio button to plot any of these values on the graph) against the timestamp as shown in the figure below.

Figure 4.37

4.11.2 Import Data

Import Data function allows you to import the data manually for any instrument in a particular format. When you click the Import Data option in the left menu under the Additional Features menu as shown in figure 4.38

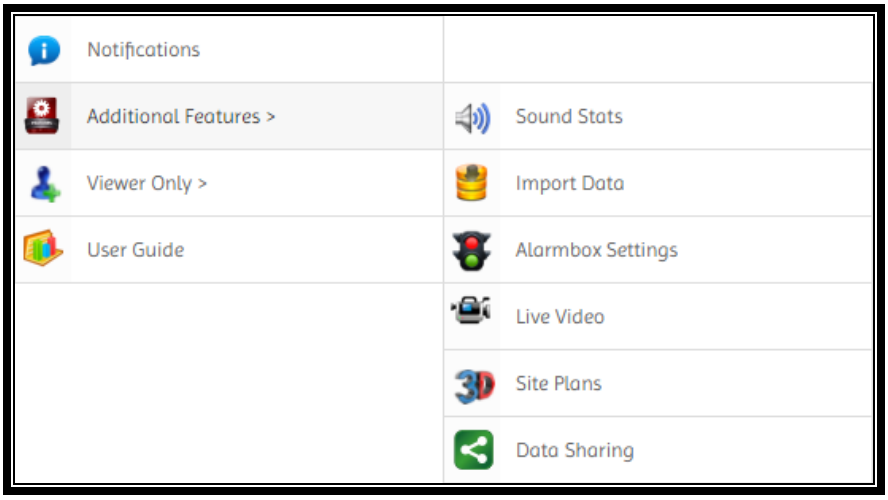


Figure 4.38

The application shows you the instrument list where you can select an instrument which you want to import data for as shown in figure 4.39

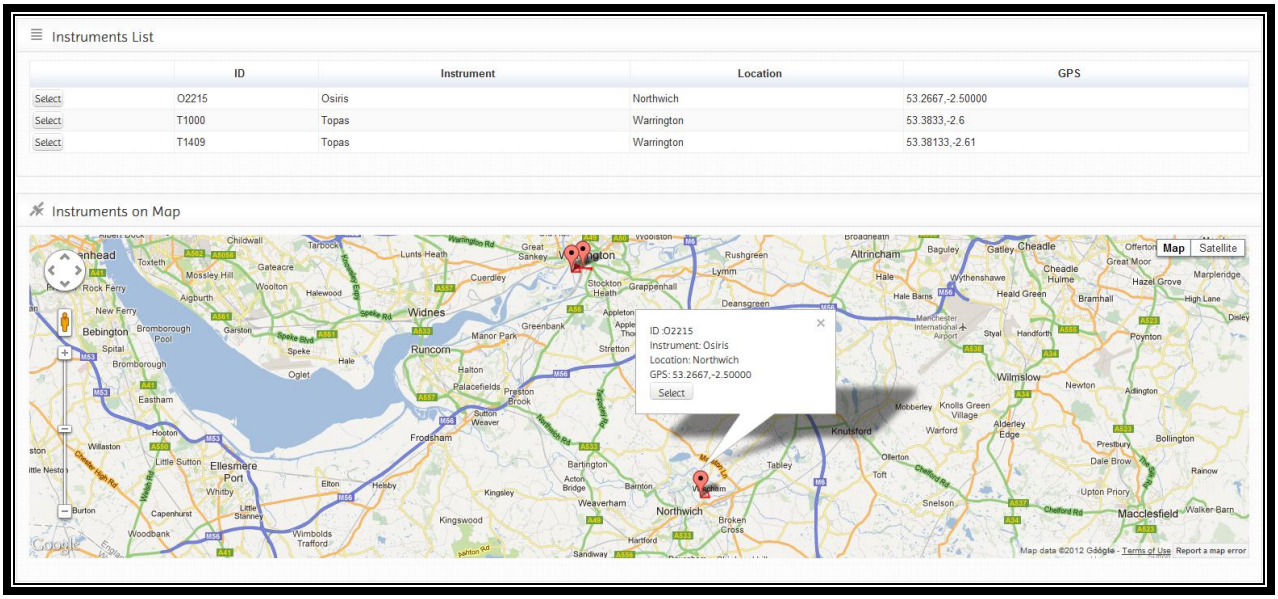


Figure 4.39

You can select an instrument as discussed in section 4.1.1. When you have selected an instrument, the application displays the import data page as shown in figure 4.40.

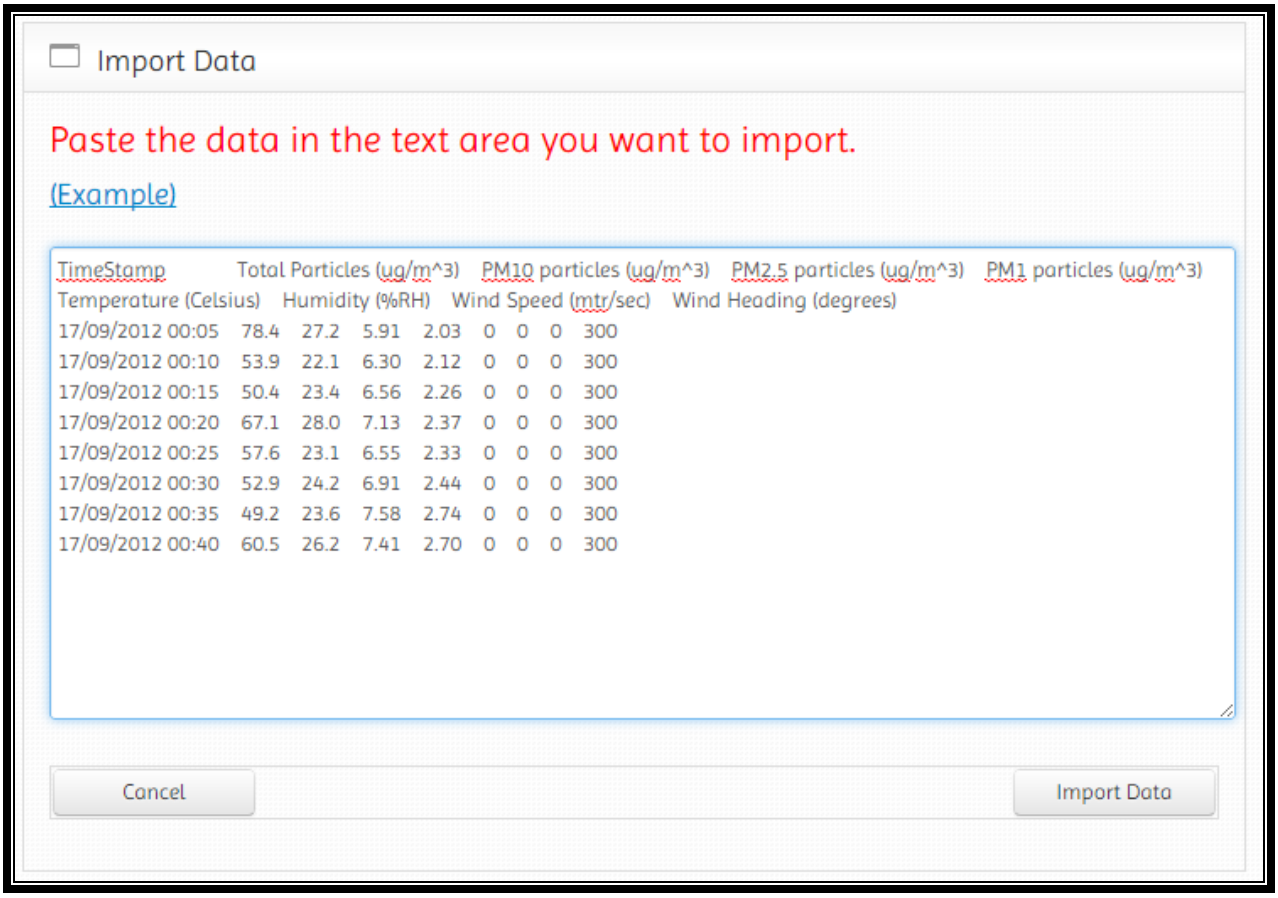


Figure 4.40

The application accepts only two formats which you can import the data in. The accepted formats are displayed when you take the mouse cursor over the *Example* label as shown in figure 4.40. Copy the data you want to import and paste it into the text area available on the page. After you have finished pasting the data into the text area, click the *Import Data* button to upload the data into the database for the selected instrument. The application displays a confirmation message when the data has been uploaded into the database as shown in figure 4.41.

Figure 4.41

An error message is displayed if the format of the data is incorrect. You can go back using the browser's back button to import the data again.

4.11.3 Live Video

This option allows you to see the live video from the instrument if the IP camera is attached to the instrument's web server. When you click 'Live Video' option in the left menu, you are asked to select the instrument you want the video for. Select the instrument as discussed in section 4.1.1, then you will see the live video from the IP camera connected to the instrument as shown in figure 4.42.

Figure 4.42

4.11.4 3D Site Plans

Here you can see the 3D view of your site(s) on the map. These 3D models are built by our engineers and uploaded on the map to display the accurate location of the instruments on the site. These models can also be imported to Google Earth. On the top left corner of the model, click the link 'View in Google Earth' to download the KML file to view the models in Google Earth.

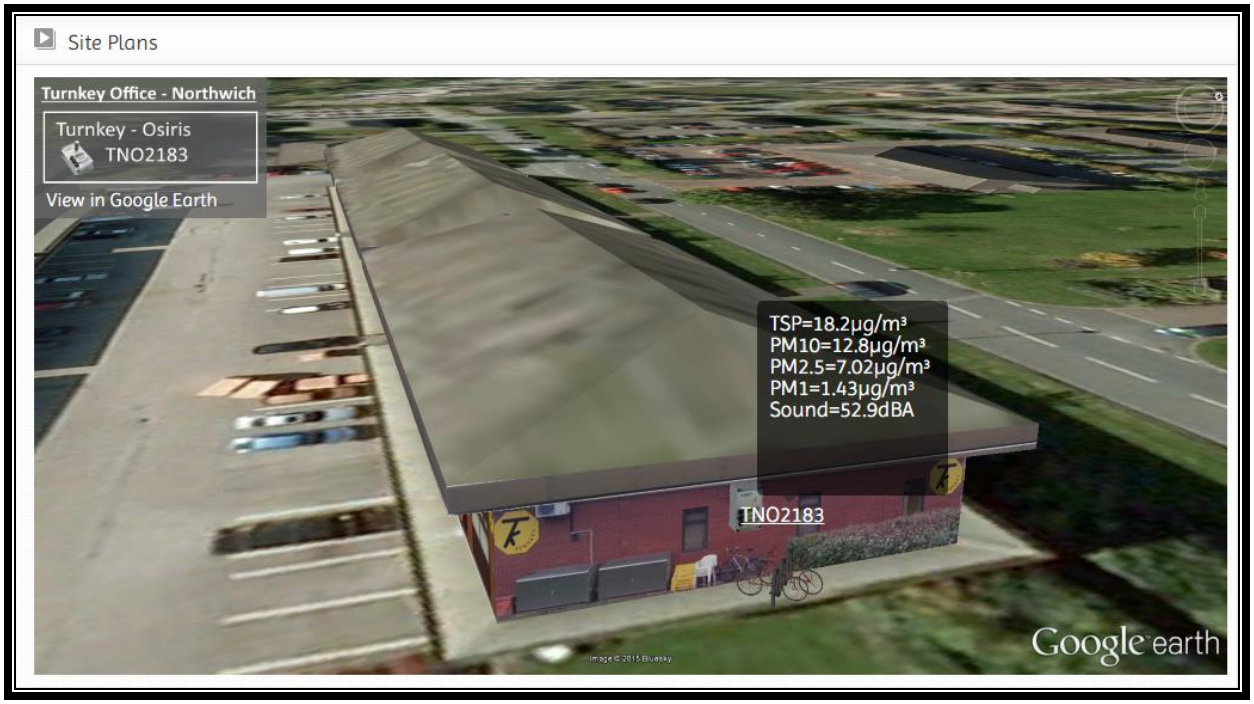


Figure 4.43

4.11.5 Data Sharing

AirQWeb allows you to share your data with other AirQWeb users. You can share your instruments with multiple users. When you share your instruments with others, they cannot control your instruments neither they can make any changes to your data. They can visualise the data from shared instruments, generated reports and compare data. They can also setup Email & SMS alerts on the shared data but these alerts are independent of main alert configurations. Click Data Sharing option to control data sharing as shown in figure 4.44

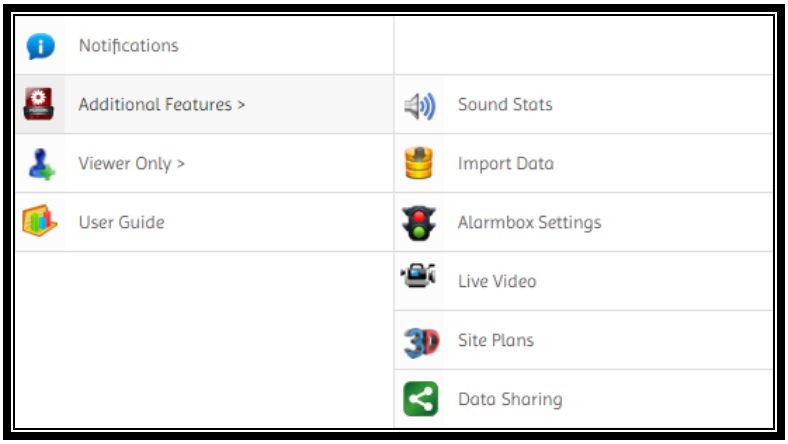


Figure 4.44

This will show you the data sharing page where you can manage your shared instruments, accept or reject others request to share data or request others to share their data as shown in figure 4.45

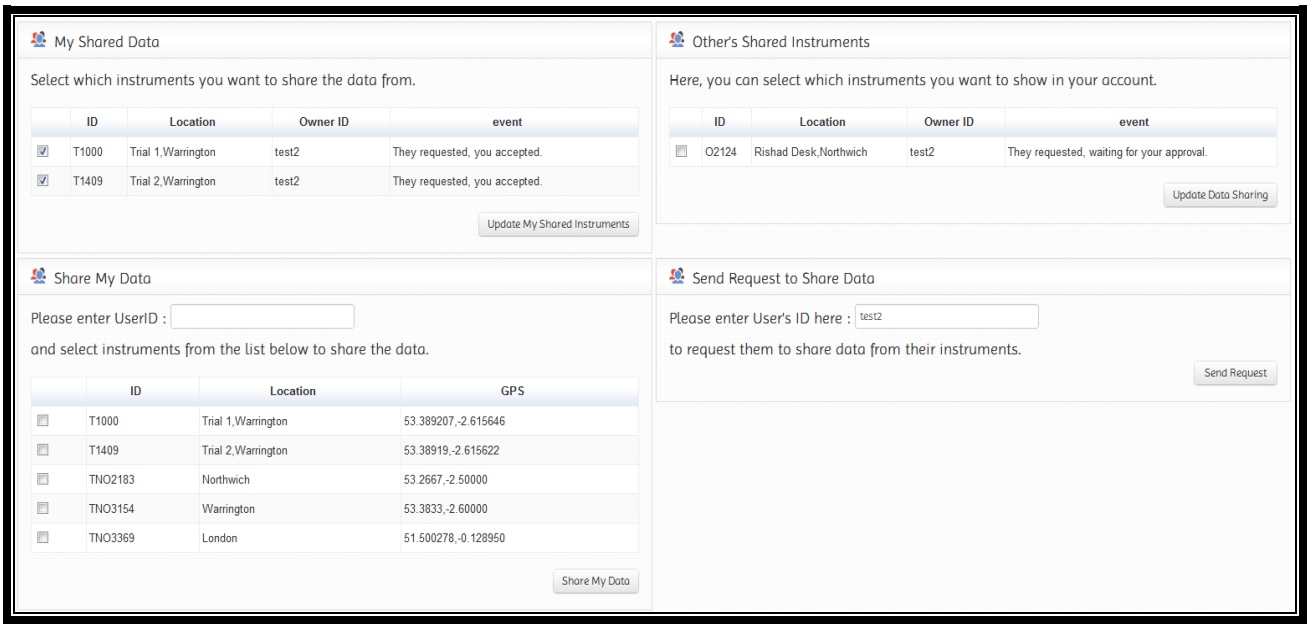


Figure 4.45

My Shared Data: Here you can control which instruments you want to share with others.
Others Shared Data:Here you can select which instruments of others you want to show in your account.
Share My Data: Here you can send a request to other users to share your instruments with them.
Send Request: Here you can send a request to another user to share their data with you.

4.12 Viewer Only

If you want to create a child account to share your data with limited access, you can create multiple 'Viewer Only' accounts and add any number of instruments to the viewer accounts to allow them to only visualise the data. There are 4 options in the sub menu of the View Only menu as show in the figure below

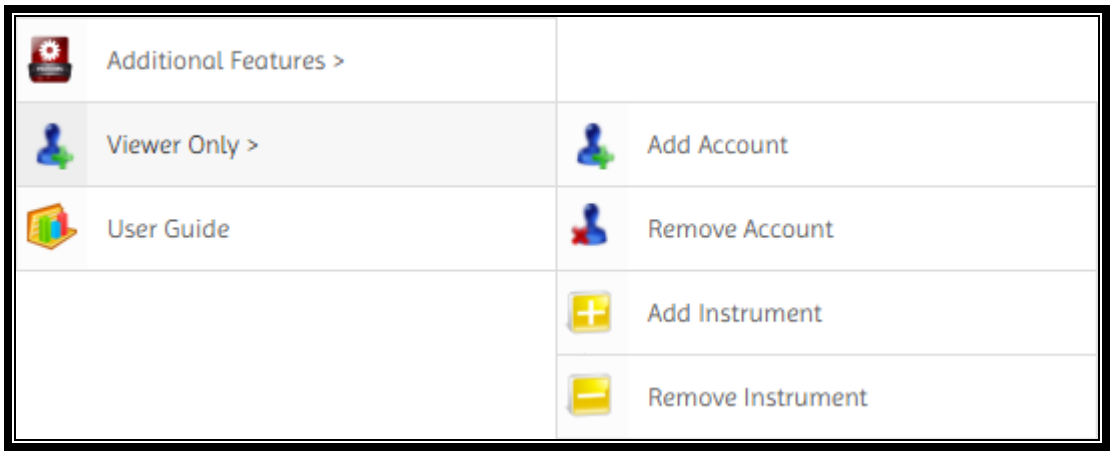


Figure 4.46

4.12.1 Add Account (Viewer Only)

Select this option to create a viewer only account. Enter the details in the form as shown below and click 'Create Account' button to add a viewer only account. After the account has been created successfully add your instruments to share the data as described in section 4.12.3 and provide the login details to the Viewer account holder.

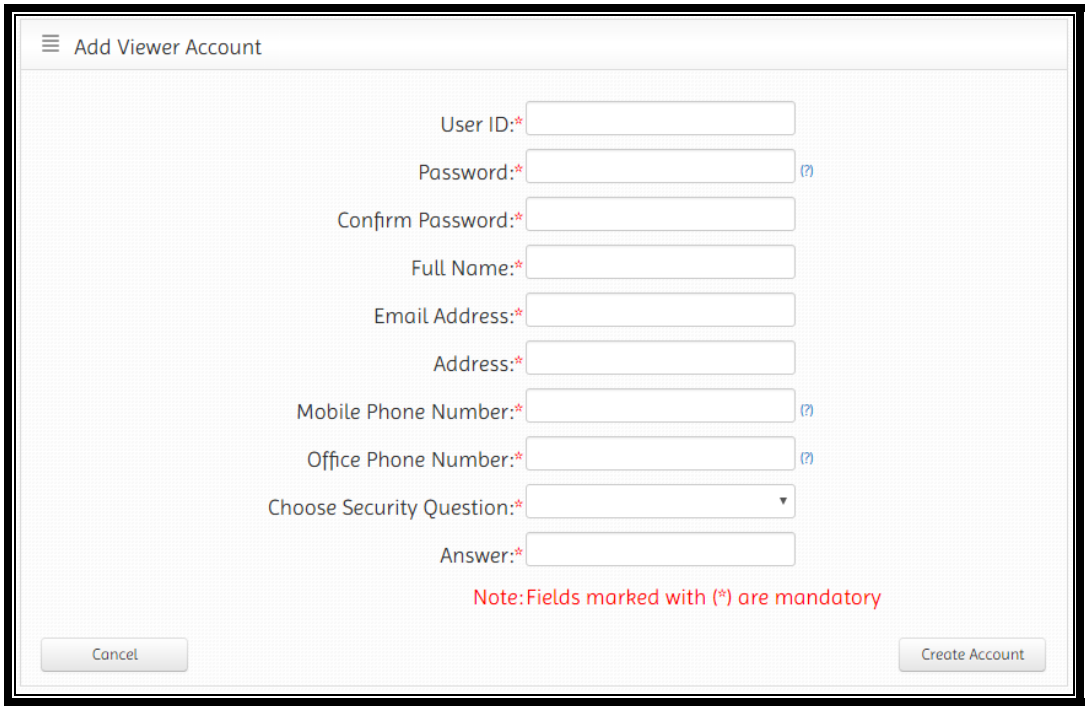


Figure 4.47

4.12.2 Remove Account (Viewer Only)

If you wish to delete a Viewer Account, select this option. This will display a list of Viewer Account under your account, select the account from the table as shown in the figure below and confirm to delete the account.

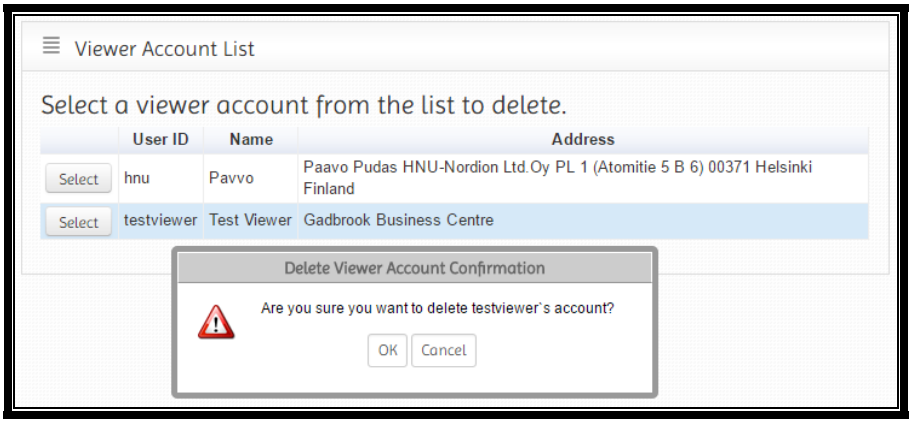


Figure 4.48

Viewer Only account will only be able to visualise the data, generate reports and view the notifications. With the limited access they cannot add/update/delete instruments of change configuration or control the instruments.

4.12.3 Add Instrument (Viewer Only)

Once a Viewer Account has been created, you must add at least one instrument to the account to share the data from the instrument. Selecting this option will display a list of registered Viewer Accounts under your account. Select the desired Account from the list which will display the list of all your instruments. Select any number of instruments from the Instrument List by ticking the check boxes next to the instrument IDs and click 'Add Viewer Instruments' button as show in the figure below

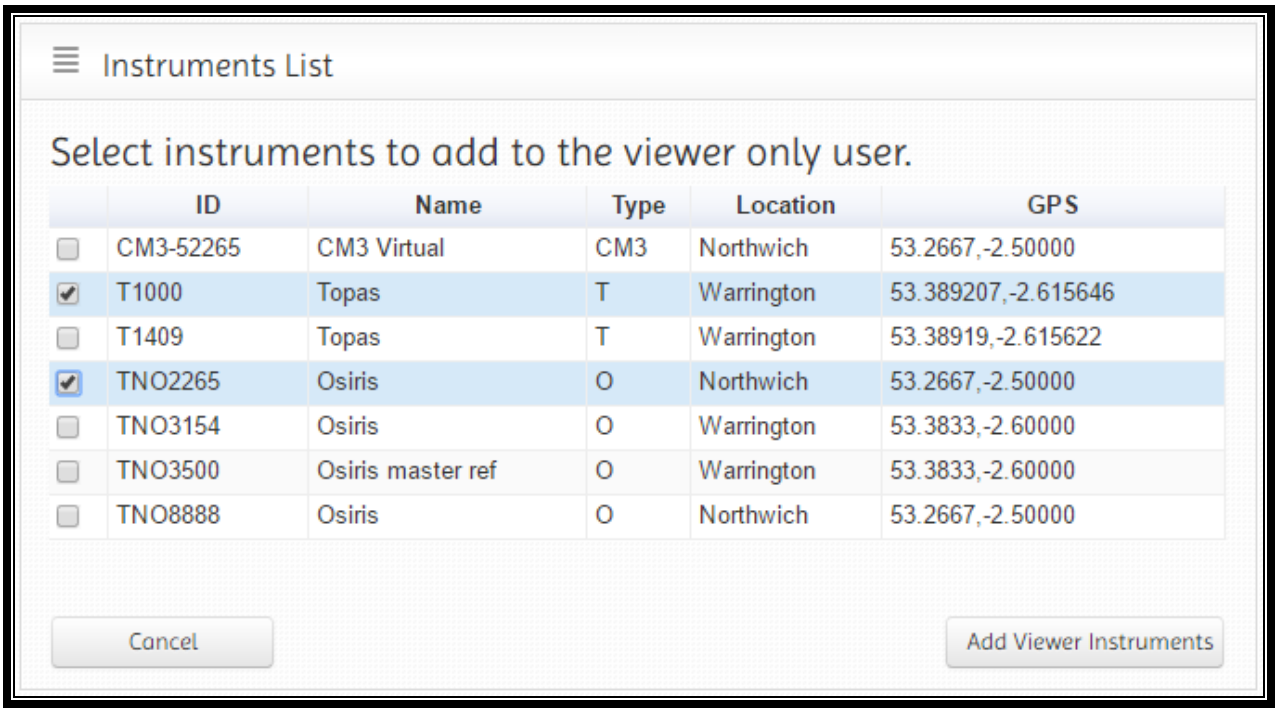


Figure 4.49

4.12.4 Remove Instrument (Viewer Only)

If you want to remove an instrument from a Viewer account, you can use this option. Select the User ID from the Viewer Account List then select the instrument(s) from the list of instrument(s) you have already added to the viewer account and click 'Remove Viewer Instruments' to remove the selected instruments from the selected viewer account as shown in the figure below

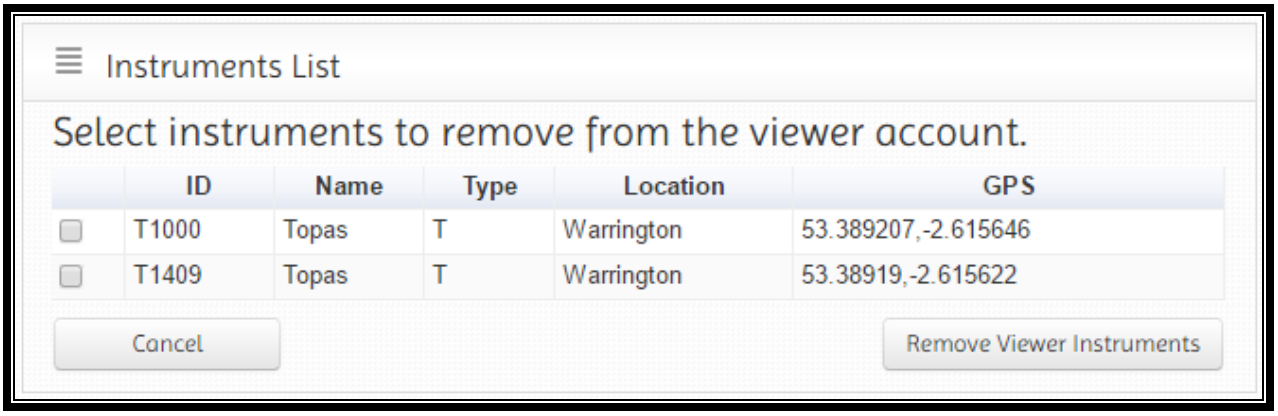


Figure 4.50

4.13 Update Profile

Update Account option allows you to change your account details such as name, address, contact details etc. When you click the option as shown in figure 4.51

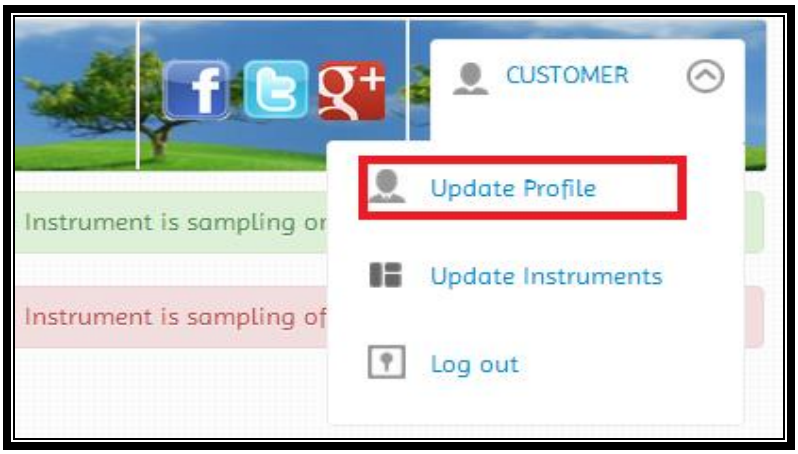


Figure 4.51

The application shows you the update account page where you can change the details as shown in figure 4.52.

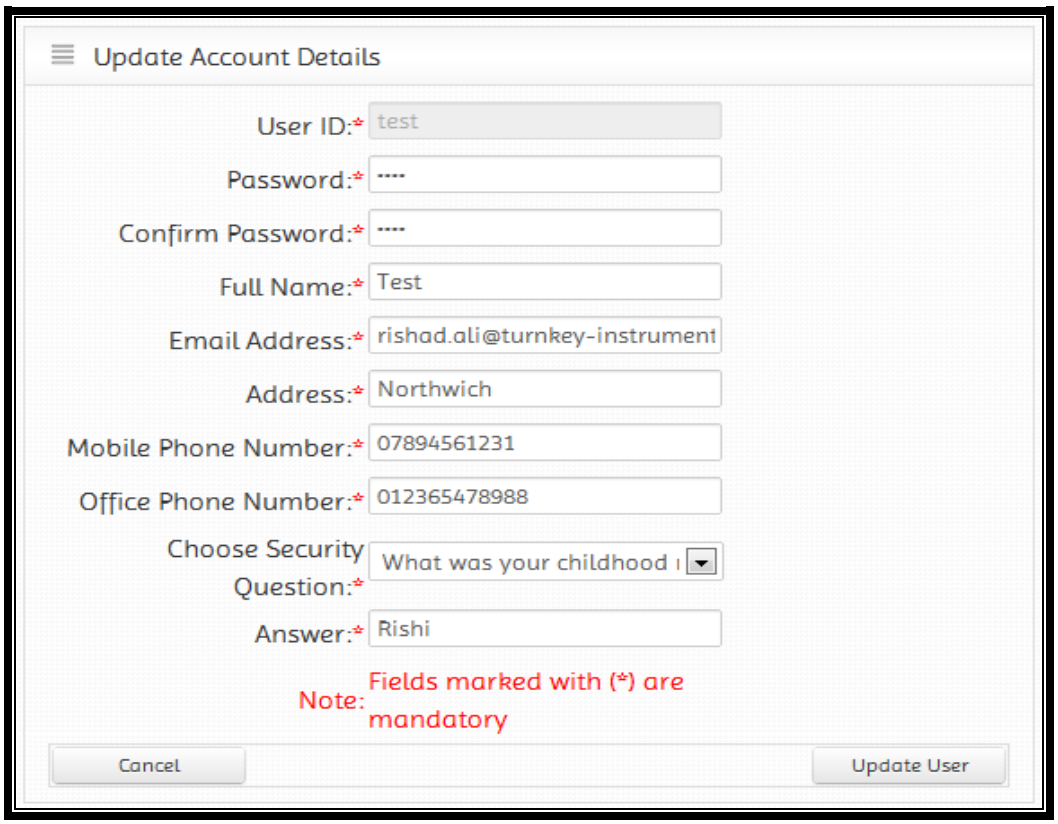


Figure 4.52

You can change all your account details listed above using this option. We recommend you to change your password and security question/answer when you login first time.

4.14 Update Instruments

You can update the details of your instruments using this option such as IP address, port, location, GPS coordinates, etc. Click the Update Instrument link as shown in figure 4.53

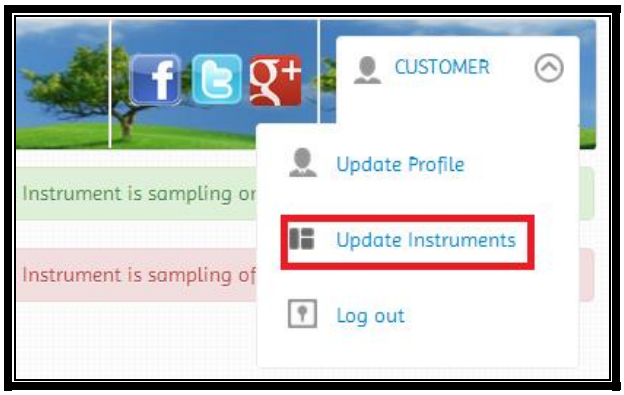


Figure 4.53

This will show you the instrument list to select an instrument as discussed in section 4.1.1. After you have selected an instrument, the application shows you the details of that instrument and allows you to change them as shown in the figure 4.54

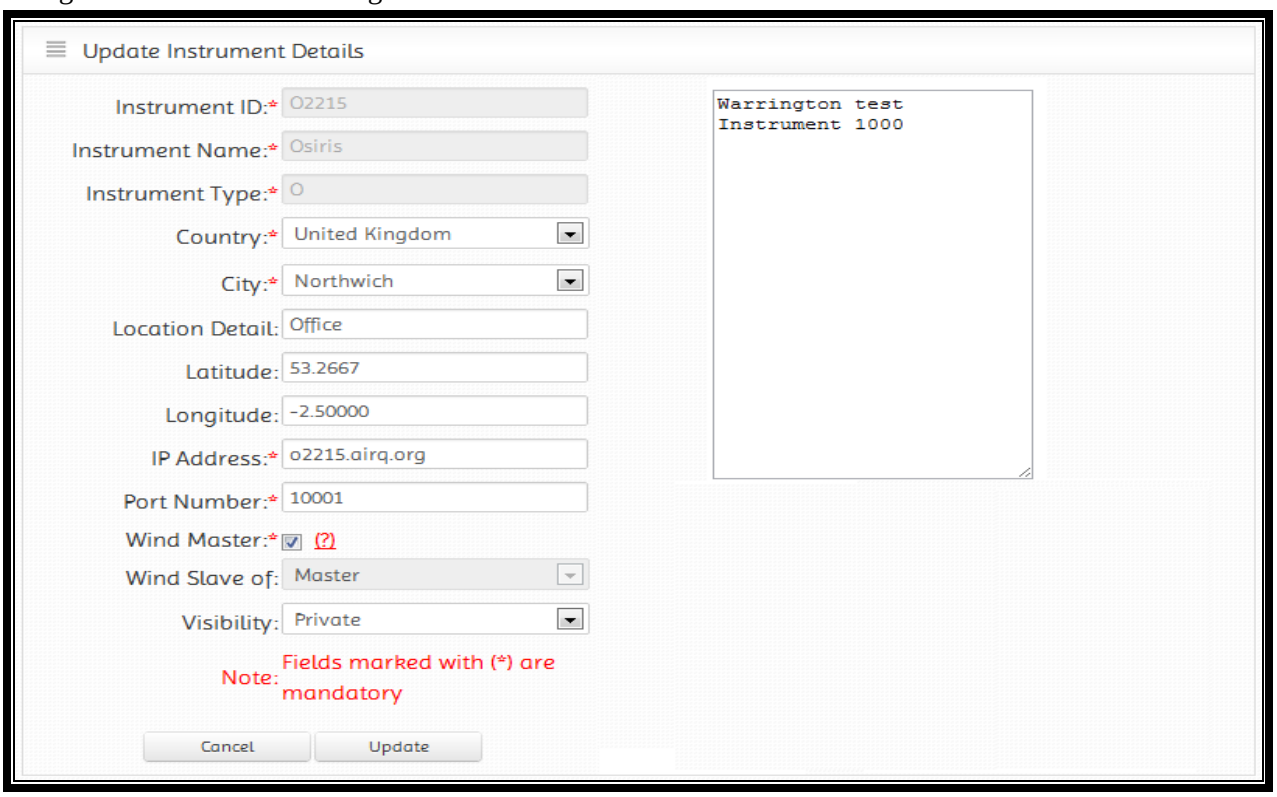


Figure 4.54

If the instrument has its own anemometer to measure wind speed and direction then you must check *Wind Master* check box otherwise, you can get the wind data from another instrument using the *Wind Slave of* option. You can keep some notes in the memo box on the right-hand side.

4.15 Special Instructions for Error Correction

When you are using the Visualize Data option you can see a message saying,
"Sorry, there is no data available. Please select the date(s) again".
Please select different dates and search again.
When you are communicating with the instrument to start/stop sampling or Upload data or configuration you may see a message like,
"Could not establish the connection with the instrument".
Please try again. If you see this message again and again, you will have to check the instrument's IP address and port and the internet connection. This may occur if the port that instrument uses is blocked or if the instrument is talking to other application such as AirQ (Desktop application). Please contact support in case of technical problem.
Loss of Contact: On the main panel, you may see a notification saying,
"AirQWeb lost contact with **instrument#** at date and time".
This notification can be temporary if the instrument is talking to another application such as "AirQ desktop". AirQWeb keeps on trying to re-establish the connection. If the connection is not re-established within one hour AirQWeb will generate a loss of contact alert (if enabled in "Email & SMS Alerts" options). AirQWeb automatically uploads the data from the instrument's memory when the connection is re-established. If you see long gaps in the data you can manually upload the data using the "Upload Data" option from the left menu (the long gaps occur when the instrument is not sampling, probably due to power issues).

4.16 Caveats and Exceptions

If the application crashes or does not display the data please contact support.