INTEGRATED METOCEAN MONITORING SYSTEM
WEATHERMONITOR
SHORT USER'S GUIDE
Issue Date: January 2016

Rev	Description	Prepared	Checked	Approved	Date
3	Final	ACW	JDM	JDM	January 2016
2	Final	MELS	JDM	ACW	September 2015
1	Final	IB	ACW	IB	January 2014
0	Final	ACW	SJH	IB	May 2012

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1. SUMMARY

The purpose of this document is to give a general overview of the Fugro GEOS Weather Monitor software and troubleshooting to help in identifying software and hardware problems. If the information provided in this document does not provide the solution to a problem with the system, it will at least guide the trouble-shooter to gathering the information required for correspondence with Fugro GEOS personnel to provide the best support remotely and assess if a visit is required.

2. INTRODUCTION

The Weather Monitor software was developed and is maintained by Fugro GEOS. It is a real-time data acquisition software allowing sensor data to be captured using serial communication ports and displayed on webpages. Data is also stored so that it can be processed at a later date using, for example, spreadsheet software such as Microsoft Excel.

3. WEATHER MONITOR – GENERAL OPERATION

All troubleshooting is required to be undertaken on the main Weather Monitor server computer. No work needs to be carried out on any remote PC connected to the system

3.1 Startup

On powering up the computer Weather Monitor is set to auto start up. No intervention is needed to start the software.

After the initial startup period during which the instrument drivers and configuration are loaded, the Browser will open.

The Browser opens a preconfigured webpage. To begin with, the displays may show "No Data" or "Awaiting Data". This is normal, as the system has just started and the displays show one minute values. After approximately one minute the webpage will update itself and display the Meteorological Data.

3.2 Navigating Webpages

At the top of the webpage is a navigation menu bar in which there are the links to the other available webpages that the Weather Monitor system provides. These include graphical plots of historical data for time periods between six hours or twenty four hours and also compass plots showing wind speed and direction.

To select a new webpage click on the link for the page. Notice that the link will change colour when the mouse pointer is moved above it. The new webpage will open in the same window.

It is possible to view the data point that the web display is displaying by hovering the mouse pointer over the centre of the displayed value (shown below).
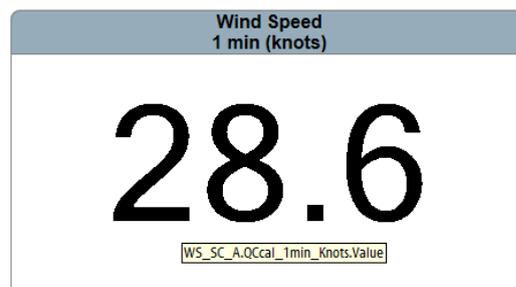
This will show a yellow "sticky note" showing the Data source e.g. WD_UNIT.QCcal_1min_knots.Value this relates to Wind Direction one minute value. Make notes of the data source of any displays that are not working as this will help in troubleshooting later.
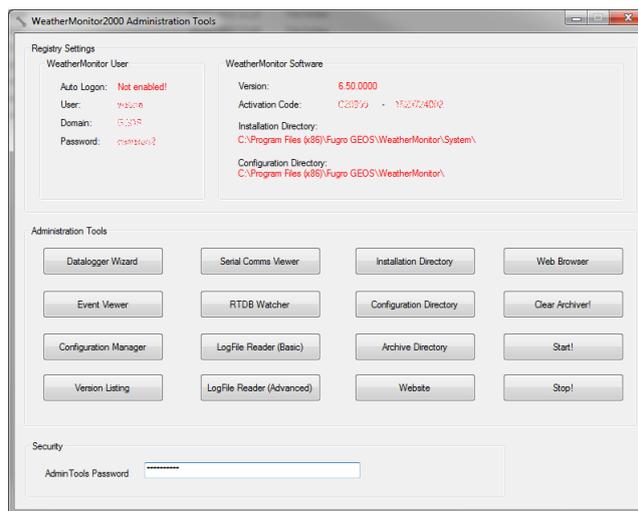
3.3 Weather Monitor Administration Tools

Weather Monitor Administration Tools is the main user interface for configuring and running the Weather Monitor software. To open Administration Tools click on the 'Spanner' icon.

AdminTools

This icon is located either on the desktop or in the quick launch section of the task bar. It is also possible to directly navigate to Administration Tools via the All Programs menu – Fugro GEOS – Weather Monitor – Administration Tools.

After clicking on the icon, the Weather Monitor Administration Tools interface will open. A number of the buttons will be "greyed" out. The available buttons allow basic use of the Administration Tools software such as accessing general installation and configuration files and also starting the Browser.

To access the higher level functions of Administration Tools a password is needed. The AdminTools Password is Fugro GEOS (case sensitive). Once this is entered all buttons will be available in the Administration Tools software.

3.4   Stopping Weather Monitor

To stop Weather Monitor open the Administration Tools display and type the AdminTools Password. (see section 3.3). Click on the "**Stop!**" button to stop the software.

3.5   Starting Weather Monitor

To start Weather Monitor open the Administration Tools display and type the AdminTools Password (section 3.3). Click on the "**Start!**" button to start the Weather Monitor software.

A dialog box will open click Start again.

This will bring up an enter password dialog box. Enter the password and click OK to start the Weather Monitor software. The generic password for **ALL** platforms is oceanor (all lowercase). The password can be found on the main Administration Tools display under the section WeatherMonitor User – Password.

Note
If the system is using Windows Server 2003/8/12 then this password will be different - contact us at geos.support@fugro.com for details.

3.6   Extracting Data

Using the logged data it is possible to analysis the data by plotting graphs and also helps in troubleshooting sensor failure.

Data is stored in binary on the computer; these binary files need to be converted into usable files before the data can be processed.

To extract data open Administration Tools (section 3.3) and click on "LogFile Reader (Advanced)"
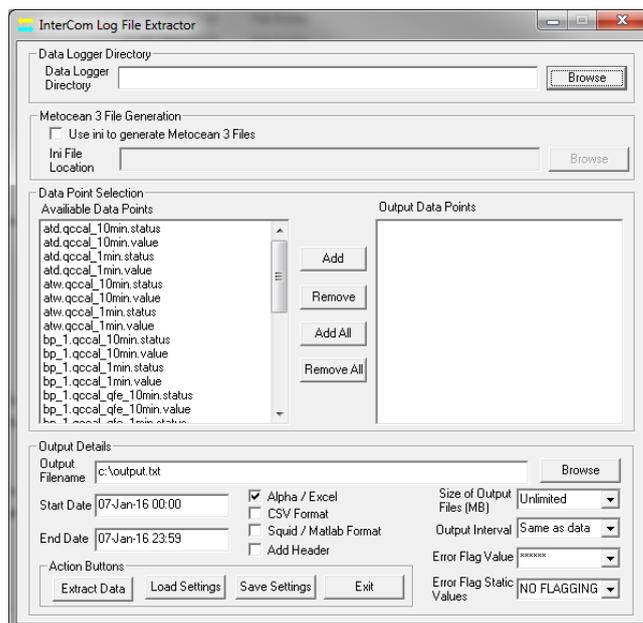
Click on the "Browse" button in the top right hand of the Log File Extractor window. Navigate to the Logger Directory, usually stored on the D:\ drive. Once the Datalogger folder is open the available data points will appear in the left hand of the window. Add the required data points to be extracted to the right hand side of the window.

Once the data points have been selected; change the Output Filename (using the .txt file extension) to an appropriate name or use the Browse button to navigate to a suitable folder.

Enter the Start Date and End Date of the period that you would like to extract data for, be sure to follow the correct date/time format DD-MMM-YY HH:MM (e.g. 09-May-08 23:59). The Alpha/Excel format for the output file type is already selected; this outputs the file in comma separated values that can be converted to be used in Microsoft Excel. It is useful to select the Add Header check box, this add the data point title to the top of the list of values.

It is not required to change any other settings, unless told to do so by Fugro GEOS.

Click the "Extract Data" button to extract the data; this may take a number of seconds to complete depending on how much data is being extracted.

Once extracted open the text file to ensure that the data has been extracted correctly, once the data has been verified zip the extracted data files and send to Fugro GEOS. It may be beneficial to password protect the zip folder as this allows the data to be sent via firewalls easier (remember to send the password in the accompanying email).

4.   WEATHER MONITOR – TROUBLESHOOTING

4.1   General system status

- On the Main Fugro GEOS computer, first check if data is being displayed on the Custom Browser, the display may be greyed out meaning that the system has timed out, try refreshing the webpage (press F5 or the refresh button) to see if this recovers the data.

- Note any displays that have "No Data" or are "Awaiting Data" and make note of any other error messages displayed on the webpages. The Sensor Status webpage is used to give a general overview of the status of each of the sensors.

- At the bottom of several of the webpages is a Last Update timestamp, make a note of this time and date and check to see if it is close to the present time. If the timestamp is in the past this may mean that the system has frozen and stopped updating the webpages.

- It is possible to find the data point being displayed on the webpages by placing the mouse cursor over the displayed value/error. Make a note of the data point source as this will help troubleshooting later.

- Take screen captures of the webpages as this will help troubleshooting later (press the Print Screen key; open the program Microsoft Paint and paste. Save the file to the desktop).

- Once all troubleshooting data has been retrieved from the webpages close the Browser.

4.2   Using the Real Time Data Base (RTBD) Watcher

The Real Time Data Base (RTDB) Watcher can be accessed from the Administration Tools display by clicking the RTDB Watcher button; the Weather Monitor software must be running to use the RTDB Watcher. This tool allows the user to examine each data point received and processed by the Weather Monitor software. It is particularly useful as it displays data and status values from the sensors and each level of processing starting from the raw.
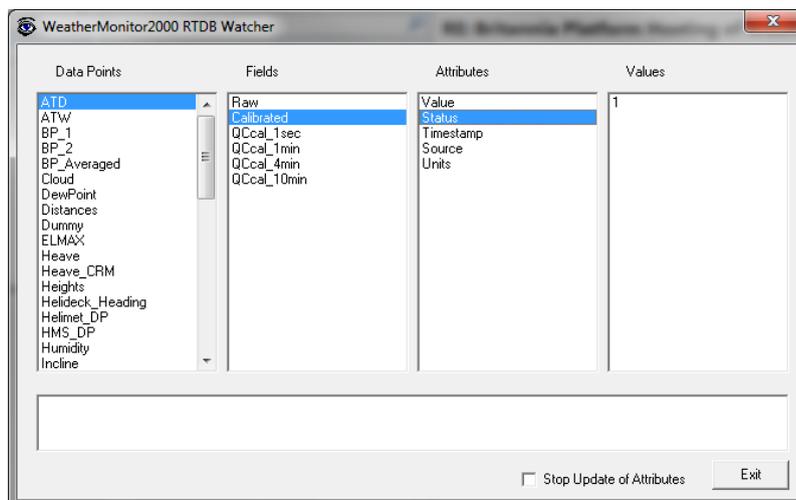
Using the data point source displayed on the webpages, select the appropriate Data Point – Field – Attribute. In this example, Air Temperature Dry (ATD) Raw Value has been chosen. The Raw value is the actual value being sent from the sensor. The Calibrated value is used if any

calculations are needed to convert the Raw value into other units, such as converting voltages to degrees Celsius for temperature.

First check that data has been received in the Raw field. If no data is showing then no data is being received from the sensor. Then check the Calibrated field, does this value look correct e.g. approximate temperature/wind speed etc. Also check the Status of the Raw and Calibrated fields, this will give you an indication of any errors. A status value of 0 (zero) means that the data is being received and processing ok. A status value of 1 (one) means No Data and a status value of greater than one means bad data.

Check if the timestamp is updating. If it is not, it would indicate that the system has stopped receiving data.

Check several of the data points, ideally one for each sensor, such as temperature, humidity, pressure, wind speed, wave etc. Make a note of the data points and whether values are displayed and any status values.

If no raw data is being received then this could mean that there is a hardware problem, if raw data is being received but not being processed this could mean a problem with the software.
Ensure all troubleshooting data has been recorded.

If you suspect no data is being received then it is possible to check the serial communications functions using the serial comms viewer button on Admin Tools. Ensure that Weather Monitor software has been stopped and then press the serial comms viewer button. Please take a screenshot of the display as this may aid in troubleshooting.

4.3   Task Manager and Event Log

With the Weather Monitor software running, open the Task Manager (Ctrl-Alt-Del). Check the memory usage on the computer and if possible, take screen captures of the Task Manager pages (Applications, Processes and Performance). This will reveal if there is a problem with computer resources. Save the screen captures using Microsoft Paint to a suitable folder on the desktop.

Open the computer Event Log (a direct link is available from the Administration Tools display) save the Application and System event logs by right clicking on them and then Save Log File As. Save both files to a suitable position on the computer such as the Desktop.

If possible, name the files suitably such as containing the date and vessel name e.g. MetData_20080422.bmp, 20080422_EvtLog_Application.evt etc.

4.4   Restart PC and Weather Monitor software

To ensure that there is not a problem with the computer hardware and that the software has not frozen, stop weather monitor (section 3.4).

Close Administration Tools and shutdown the PC like a normal PC, via the Windows Start menu (a restart is ok).

Let the PC boot up normally and allow Weather Monitor to auto start and the Custom Browser to open automatically. Wait a few minutes and check if data is being displayed on the webpages. If not, check the RTDB Watcher and repeat troubleshooting remembering to record your findings.

Note: Motion data will take approximately 10 minutes before data is shown on the webpage and Wave data will take 34 minutes.

4.5   Webpage Browsing

To browse the system webpages open an Internet Explorer page (Must be IE 9 or higher). Type the name of the PC in the address bar and press "Return" or the "Go" Button. The meteorological webpage should now be displayed on the screen. Once the meteorological webpage is fully displayed it is possible to save the page to the "Favourites" of the web browser and can be accessed from here when needed. A shortcut can also be added to the desktop if required to directly access the meteorological data.

Open a command prompt (start – Run – type "cmd" – Enter)

If you are trying to connect remotely to the Fugro Geos PC the you can use the ping command Type "ping XXX.XXX.XXX.XXX" where XXX.XXX.XXX.XXX is the IP address of the Fugro Geos Computer this will ensure that the client PC can locate the weather station server (also try "ping 'name of computer'" this will ensure that the DHCP server can resolve the IP address of the weather station server from its computer name).

If the weather station server does not reply then the client PC cannot access the webpages from the server.

For further information on webpage errors please contact Fugro GEOS.

5.   GENERAL SYSTEM MAINTENANCE

The sensors used by the Metocean system are designed to be low maintenance or maintenance free. It is advisable to perform some routine inspection and maintenance of the system as follows:

1. General visual inspection of all sensors and enclosures, checking on the state of cabling and junction boxes. Make note of change of exposure, especially for wind sensor and temperature/humidity sensor.

2. Cleaning of the Ceilometer and Visibility (If Fitted) sensor is advised monthly –

   Cleaning procedure for the Ceilometer window is as follows:
   - First flush the window with clean water to remove coarse grains. Remember to keep the enclosure door closed.
   - Then clean the window with a soft, lint-free cloth moistened with a mild detergent. Be careful not to scratch the window surface.

   Cleaning procedure for the Visibility Sensor is as follows:
   - Moisten a soft, lint-free cloth with isopropyl alcohol and wipe the lenses. Be careful not to scratch the lens surfaces. Lenses should dry indicating that the lens heating is functioning.
   - Check that the hoods and lenses are free of condensed water, or ice and snow deposits.
   - Wipe the dust from the inner and outer surfaces of the hoods.

3. Wave radar Maintenance (If Fitted)
   - Hose / wipe down sensor unit with fresh water
   - Check the following items for damage, corrosion, and security
   - Weather protection cover
   - Flameproof housing and TRL/2 adapter
   - Antenna feeder with washer ball, finger nut and lock nut
   - Antenna dish
   - Mountings
   - Cable glands
   - Cables

4. General Computer Maintenance
   - Stop Weather Monitor
   - Reboot the PC and allow Weather Monitor to start automatically

Please refer to individual sensor manuals for more information on maintenance. Further computer maintenance such as hard drive disk checking and defragmentation (with weather monitor stopped) can also be done on a regular basis to ensure the hard drive consistency.

If a sensor has been damaged or appears to be functioning incorrectly, contact Fugro GEOS for further advice.

For technical assistance, contact Fugro GEOS by email:

Email: geos.support@fugro.com