

Application Note

Remote data collection & local / remote alarms using RPR Weather File

Reference: AN0057

Introduction

Remote data acquisition / viewing is becoming a must have for a lot of users of meteorological data and there are many solutions available on the market depending on the users requirements. These vary from simply display/data collection from a datalogger via direct cable, to Intranet or Internet, and to cloud or Server based services.

Application



MetStream offers users the ability to connect to all Gill meteorological sensors, log data and provides the user with the ability to easily display data or collect data files via internal Intranet or Internet (via Port Forwarding to a public IP address) at an affordable price.

However, MetStream is limited as it requires a direct cabled Ethernet connection, which in remote operations is often not available. Also MetStream is more suited to permanent power supplies due to its power draw (approx. 150-200mA), which makes remote solar / battery weather stations a challenge.

MetStream offers digital only collection from Gill Meteorological sensors, whereas a large amount of sensors used in the field still rely on analogue, which can hinder complete integration of 3rd party sensors.

Remote Station Requirements

3G based systems allow the remote collection of data from areas where there is no infrastructure and is perfectly suited to meteorological stations. Traditionally these systems would interface to existing SCADA or directly to a user's PC.

With the advent and widespread adoption of cloud based services there is now far greater flexibility in the display and dissemination of remote data to the site owner and the public where applicable.



This application note will focus on the RPR (http://www.r-p-r.co.uk/) SpaceLogger, which is compatible with a long list of sensors, including all Gill meteorological sensors and the RPR web service Weather File.

RPR

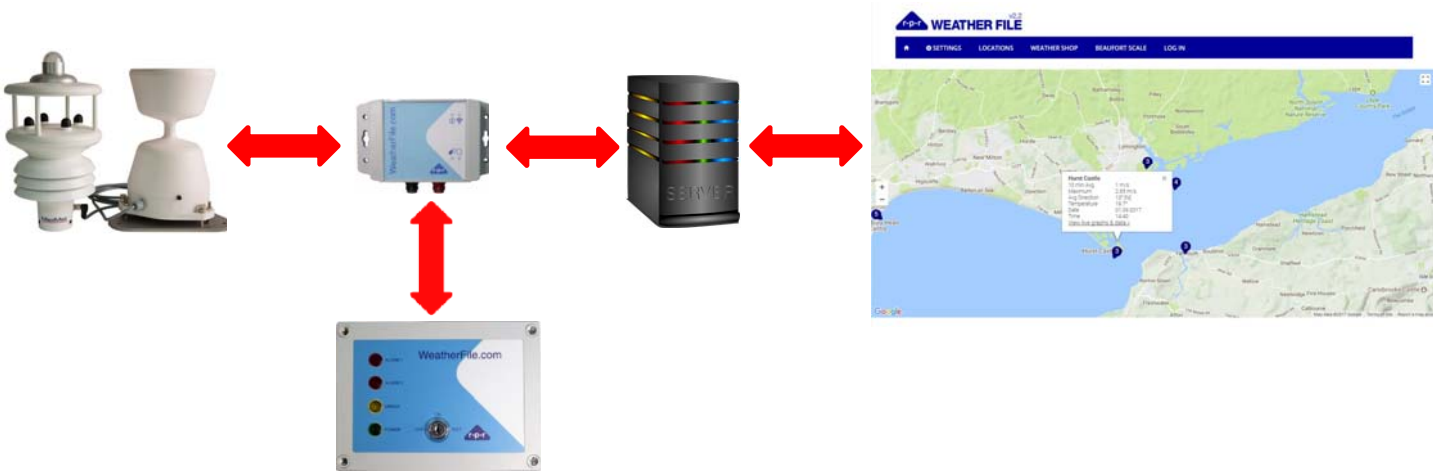
RPR have worked with Gill to provide numerous remote metrological stations for entertainment companies providing temporary stages to coastal, city and airport based systems worldwide.

SpaceLogger is a vital component of all of RPR data collection platforms, whether supplied as a portable system or as a permanently installed station. It combines control, data logging and telemetry into one compact and purpose-built device. Data is normally sent over 3G/GPRS. Weather File links the devices/sensors in the field and provides data to end users via the internet, whilst ensuring data integrity and security at both ends.

System Connection

Sensors are connected in the field to the SpaceLogger via RS232 or analogue interfaces.

A typical connection with a MaxiMet GMX531 is shown below:



Local Alarm Unit

Local Display even without internet

The RPR Managed Data Service

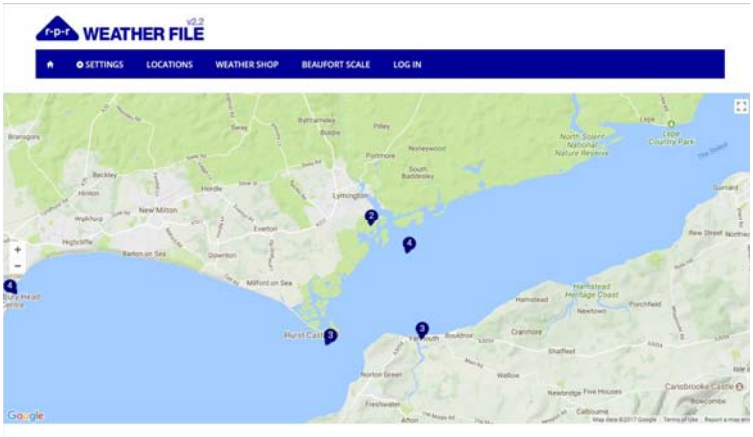
The RPR service offers a range of options to the end user, which includes remote data collection/ storage, data visualization and alarms (via email or text):

- Data collection can be from a single sensor or a range of sensors due to the multiple RS232, SDI-12 and analogue connections.
- Once a sensor is connected to the SpaceLogger, RPR set-up the connection, data collection, alarms and access to Weather File remotely from their servers. This simplifies the user experience and ensures that stations are ready to use from the moment of installation.
- Multiple sensors from many different manufacturers are supported and allow a complete monitoring station to be connected or just a simple single sensor.

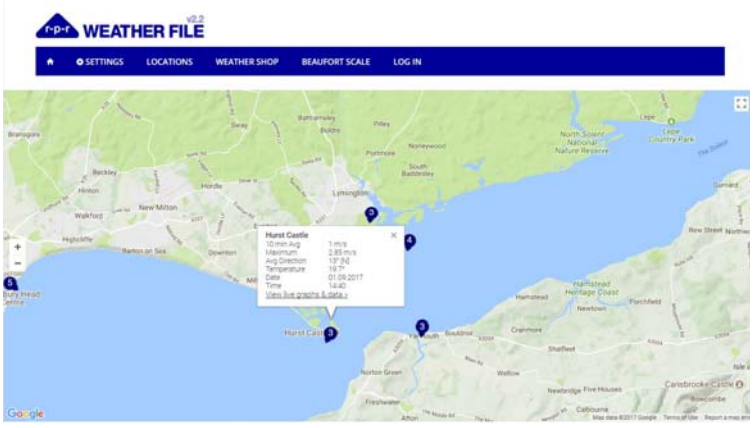
- Alarm indication on screen, via email and/or via text. Multiple alarm levels (set-up by the user). Local alarm indication using the Alarm Unit, which provides an instant indication visually and audibly.
- Data can be collected at various rates (from real-time) to suit the requirement, installation and client (normally every 10-15 minutes for weather stations).
- Data can be viewed graphically or in tabular whilst displaying station status (alarm/connected etc. via the Kiosk Display) and filter for parameter or station if multiple stations are in operation with the same user.
- The web portal and local display can be used on any web enabled device (PC, tablet, smartphone) and requires no downloads, just any web browser.
- Individual USERNAME and PASSWORD protected login to Weather File for added security for sites that are not to be made available to the public.

Weather File Data display

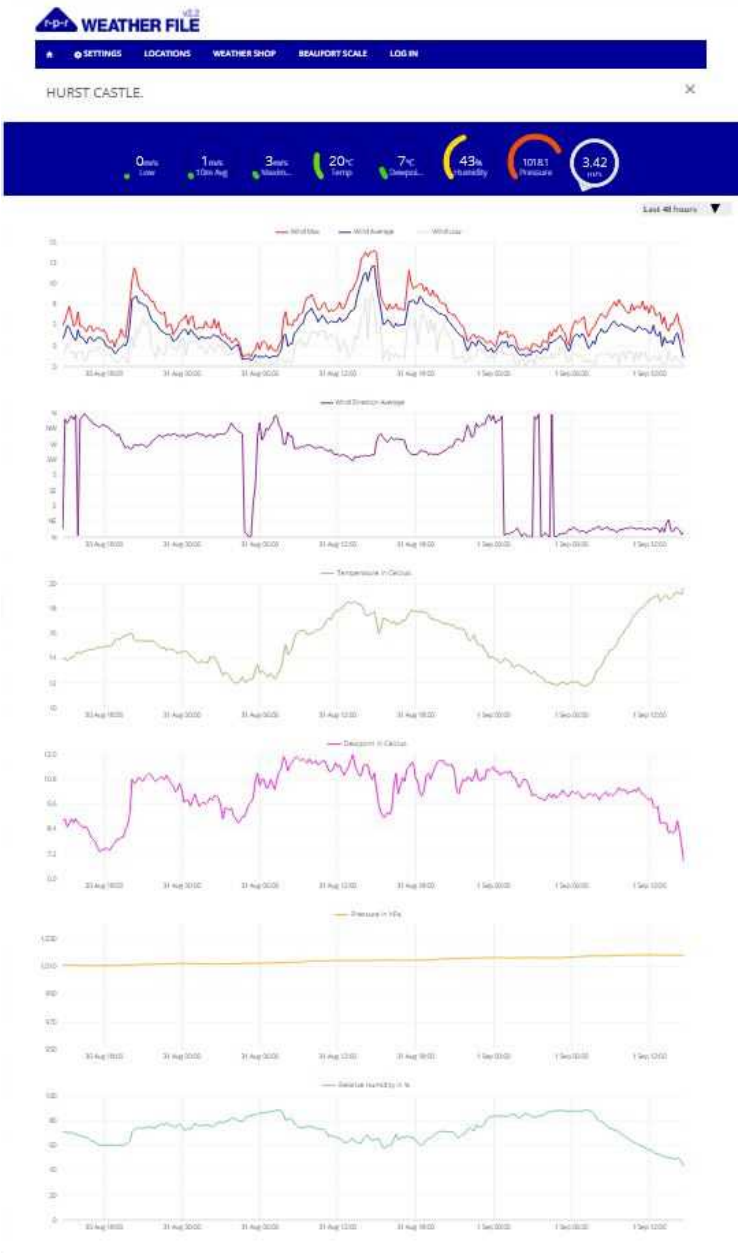
Weather File displays all of the public stations on a map based display. Users then log in to display their own individual stations. Basic wind direction and speed is shown at each location:



Once the user "clicks" on a particular station a small box appears that provides not only the station name but further weather information:

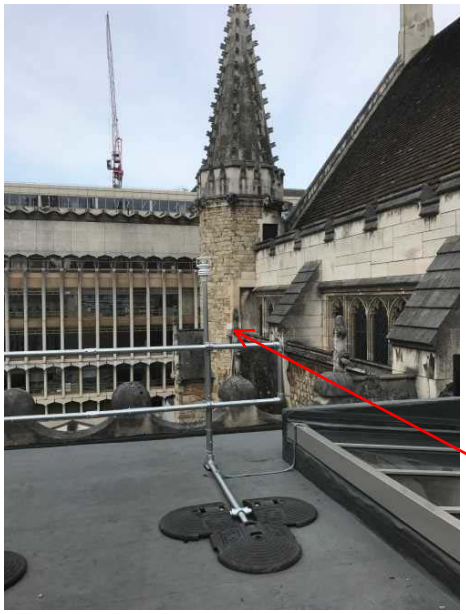


The user can "click" the link shown in the white box of the previous image and is then able to view more historical data from the station:



UK RPR Installation

Installations include Hurst Castle (New Forest, UK), North Ronaldsay Airport (Orkney Islands), Papa Westray Airport (Orkney Islands), Parkstone Yacht Club (Poole, UK), Cannon Street (London, UK), Southwald Lifeboat Station (Norfolk, UK) etc.



In the pictures you can see a current SpaceLogger installation with a MaxiMet. The SpaceLogger was mounted close by on a wall and was chosen for this remotely located system so it can provide the data directly to the end user via the secure Weather File portal.





MaxiMet was chosen as a simple vertical weather station with a single RS232 ASCII output string, which offers a whole list of parameters whilst being easy to integrate with Weather File. Although no sited for within WMO requirements, the MaxiMet is in the ideal position for the measurement requirements of this sites operations The site is at the Guildhall, London, UK.

Why Gill?

All of our meteorological sensors provide a human readable ASCII output that can be read by the SpaceLogger, and this ranges from a simple, low cost wind sensor like WindSonic to our versatile compact weather station MaxiMet, which covers most meteorological measurement requirements.



"SpaceLogger along with Weather File allows users to take the flexibility of a compact weather station like MaxiMet or a configurable weather station like MetPak and provide a complete weather station solution covering wind speed/direction, temperature, relative humidity, pressure, rainfall, solar radiation and more, with data available at the user's desk, mobile phone or tablet via any internet browser" comments Charles at RPR.

*** Please note that with Weatherfile data collection and text alarms service charges apply.**
*** Data is courtesy of RPR www.r-p-r.co.uk and www.weatherfile.com**