

Application Note

Transmitting sensor data back from extremely remote locations – Rock Seven

Reference: AN0055

Introduction

Collecting data from extremely remote systems is now becoming commonplace, and there are a number of existing GSM/GPRS services which allow this. However, they assume that there is some form of mobile network coverage, whereas a lot of extremely remote installations are far from civilization or in areas where there gaps in the mobile network coverage.

Now, there is a way to collect data from your remote sensors regardless of where the systems are installed, using affordable Iridium satellites.

Application

Rock Seven offers users the ability to connect to all Gill meteorological sensors, taking key data on a regular basis and transmitting it over satellites at an affordable price.

Alongside the meteorological data, the Rock Seven 'RockFLEET' unit also transmits position data – particularly useful where installed on buoys or other equipment that may move position either accidentally or by design. By getting regular position reports, you can receive early warnings if your equipment is moving off-station. RockFLEET is designed to provide global tracking and M2M/IoT (Machine to Machine / Internet of Things) data communication from anywhere in the world.

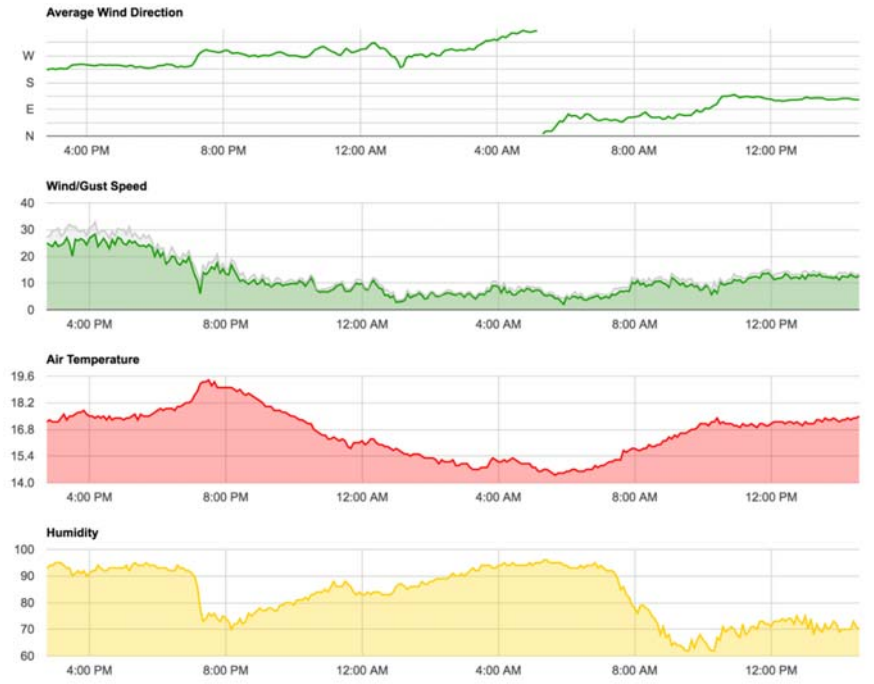
A Current UK Installation

The RockFLEET system uses the Iridium satellite network, specifically the low-cost Short Burst Data service, to deliver weather data from Calshot Spit. The new Calshot Spit Buoy is outfitted with a MaxiMet GMX600, which provides multiple weather parameters via a compact vertical station all combined into a single output string. The new Calshot Spit Buoy has been in service and was providing data to the Solent users from July 2015 to June 2017 with only one service visit.



"Adding tracking and M2M satcom capabilities to buoys and floats is a simple process with the RockFLEET system, as demonstrated through development of the Calshot Spit Light Float weather station, which is now delivering accurate real-time data 24/7," says Nick Farrell, Director, Rock Seven.





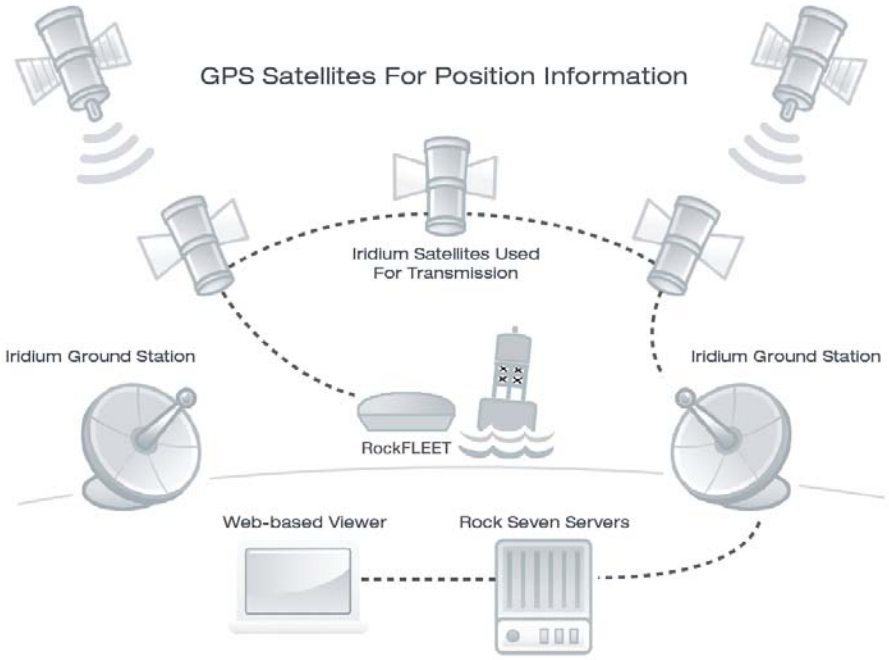
Remote Station Requirements

Low power Iridium-satellite based systems allow the remote collection of data from areas where there is no infrastructure or mobile/cellular coverage, and is perfectly suited to meteorological stations. Traditionally these systems would interface to existing SCADA or direct 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.

As the solution is satellite based, the solution will work anywhere on Earth. Provided the unit can 'see the sky' it is able to transmit the meteorological data back to you.

How is data received?

Data is transmitted using the Iridium satellite network as shown below:



Data from the service is delivered via HTTP POST to your own systems, and you can then store it in a database, analyse and process the data in whichever way you wish.

Tracking data can be reviewed on the web-based mapping solution, access to which comes with the product.



The system can also be managed using the Rock Seven web portal, allowing you to turn the satellite service on/off for months at a time, saving transmission costs when sensors are not in use.

Find out more Please email info@rock7.com for more information on RockFLEET.

Why Gill?

Gill Instruments offer a wide range of high quality meteorological sensors from 2-axis wind sensors like the WindSonic to our versatile compact weather station, MaxiMet. With over 30 years proven performance in challenging environments Gill products have built a reputation for quality, reliability and accuracy amongst the professional meteorological community across the world. Gill has an ongoing programme to understand and identify customer needs and to develop innovative solutions to address those needs.



Gill Instrument's sensors allow users to make a wide range of measurements and provide human readable ASCII outputs that can be integrated with the RockFLEET solution, The RockFLEET integration allows users to significantly expand the locations where near real-time data can be sourced from Gill products, The combination of the Gill Compact Weather Station, MaxiMet or the Gill Configurable Weather Station, MetPak and the RockFLEET solution allows customers to analyse data and make decisions based on information that can be more up to date and extensive than was previously possible.

*** Please note that with RockFLEET data collection services charges apply.**

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