

where your data matters

Customer
Case Study

The UK Hydrographic Office Marine Environmental Monitoring Stations (MEMS) Framework



OceanWise are contracted by the UKHO under a 3-year framework agreement to install, operate and maintain a number of marine monitoring sites around the world.

The framework includes provision and installation of equipment around the world, system integration, data management and an environmental data platform. OceanWise are also providing local training, mentoring and community engagement.

The project file

The UKHO identified the installation and operation of MEMS as an important component of several UK Government programmes. Maritime users can benefit from MEMS through improving navigational safety and enhanced knowledge of the marine environment as well as assisting with scientific research in understanding the implications of climate change.

Observational data collected at the sites is provided to local communities and global initiatives such as the Global Sea Level Observation System (GLOSS) and the IOC's Sea Level Station Monitoring Facility, whilst also assisting in refining tidal modelling and predictions.

Additionally, all data collected is automatically analysed, processed and archived in a centralized and dedicated online server. Data is made available for the purposes of maritime and navigational safety, planning and situational awareness including assisting with ongoing programmes to update charts and associated navigational publications, and for Tsunami warnings as required.

“ We are delighted to be working with the UKHO on this ongoing project. We already support and maintain numerous tide gauges and weather stations around the world for our port and renewable energy customers, so this contract is a natural extension of our work. Our expertise and experience in environmental monitoring systems and in-depth technical knowledge of marine data acquisition, telemetry and data management is fully utilised in this contract as we support the UKHO in realising the full benefit that MEMS can offer. ”

*Ralph Bostock,
Operations Director
for OceanWise*

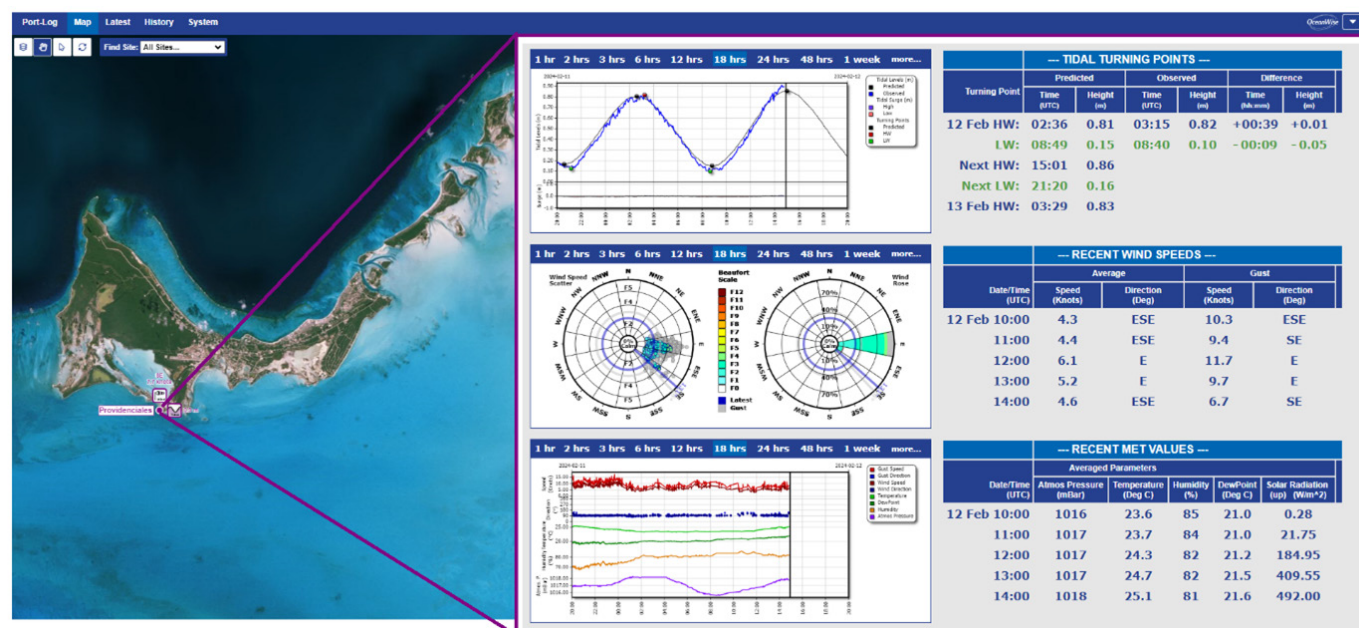
Our Solution

OceanWise have attended many sites around the world already, including Turks and Caicos, the Cayman Islands, Anguilla and Guyana. At each location, site surveys are carried out to establish the state of existing sensors and infrastructure. Work on each site is then tailored to meet the specific requirements of the user and locality. The type of work undertaken varies but includes both remedial and new installations re-instating existing sensors, improving technology and ensuring the stations are accurately measuring environmental parameters.

Where required Global Navigation Satellite Systems (GNSS) surveys are also undertaken to establish

geodetic marks for tide gauge levelling and establishing a local datum.

OceanWise have also deployed a GNSS tide buoy and profiler to collect tidal height and stream data offshore of Guyana to accurately assess both tidal characteristics and spheroidal separation for the area. The buoy will collect data for a minimum of 30 days, following which the data will be processed by the UKHO's Tide Department to establish Chart Datum for the area. Once this part of the project is completed the buoy will be reconfigured with additional sensors, such as a met station, and redeployed on a long-term basis as a metocean data buoy.



The project file

A key part of the framework is the provision of an online data platform to host, visualise, store, and facilitate the sharing of environmental data.

OceanWise's Port-Log provides the ideal platform to facilitate this. Used by a range of customers across the globe, it is a quick and easy management platform for environmental data.

Being a cloud-based data platform, it gives the ability to store data securely and publish it in near real-time via the web as well as maintaining long-term historical records. Within **Port-Log** the user has the ability to view sites in a map view for geographic distribution as well as tabular data feeds from each site as seen here on the right. This latest page shows a list of the most recently received data from all sites and sensors on the network as well as incorporating tidal predictions where available to calculate surge or cut values.



To ensure this table is always showing the most up to date and reliable data there are several indicators and Quality Control and Assurance factors built into the system to warn of a decrease in data validity. The indicators operate using a simple colour coded warning system which helps to give the user confidence (or not) in the data and to treat it accordingly. Alerts are also displayed and the user can click through to view the received error message to assist with fault finding and resolution.

The dissemination of data to all users who require it is at the forefront of how **Port-Log** operates and therefore the platform can be viewed through a web-browser on any device. There is also the ability to integrate within third-party systems such as dredge management software or Portable Pilot Units. Of course, it is not only the real-time data that is important, historical data and long-term records are also significant and the good management of these datasets is vital for decision making and coastal resilience.

All data collected can be accessed for each site, along with associated statistics and graphs such as time series all of which are customizable to the records you are interested in. There is also the ability to download the data in numerous formats for ongoing analysis in other software environments.

Outreach and Training

Throughout the process our team of engineers have provided onsite training to local organisations and users in the setup of the equipment as well as the importance of regular maintenance to ensure accurate and reliable data continues to be received.

The training has been well received and has led to some further local discussions and positive changes such as that in Montserrat where it led to changes to their Hurricane Preparation Plan.



If you have a MEMS requirement or another challenge that you'd like our help with, please contact us today.



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