

Sensing Seas with Seaview Sensing Ltd

Accurate real-time measurement of waves, winds and currents at long range, across a large area providing critical data to organisations who need to monitor and gain understanding of environmental processes. Based in Sheffield (UK) Seaview Sensing Ltd brings decades of research and software development (led by Professor Lucy Wyatt) to the ocean-sensing world. At the heart of the product range, Seaview Realtime Software processes phased-array high-frequency radar data to provide real-time measurement of surface waves, current and wind.

Seaview Sensing Ltd (web reference 1) was founded in 2004 by Professor Lucy Wyatt. Professor Wyatt has been involved in ocean information, research and consultancy since 1981. She works with the Department of Applied Mathematics and the Sheffield Centre for Earth Observation Science at the University of Sheffield (UK) and previously the University of Birmingham (UK). Professor Wyatt has achieved international recognition for the high-frequency (HF) radar oceanographic measurement methods that she and her group have developed. At the heart of Seaview's products is software that processes phased-array HF radar data to provide real-time wave, current and wind met-ocean information with a high spatial and temporal resolution and large area coverage. The software is proven and portable, working with any suitable radar. The data can be accessed via the web-based Seaview Data Viewer, which is platform-independent.

Company Profile

From a core team, Seaview Sensing has grown to provide a number of software installations and consultancy services and plans to expand as further systems are installed across the world. Later this year, Seaview will open an Australian office; the initial work there will be to oversee the installation of the software supporting the Australian Coastal Ocean Remote Sensing Network (ACORN) project. The project is part of the Integrated Marine Observing System (IMOS), which is a distributed set of equipment and data-information services that collectively contribute to meeting the needs of marine climate research in Australia. The network will expand during the next year to include several radar nodes on the south and east coasts of Australia.

Seaview's first customers were met-offices and universities interested in environmental monitoring and research. This area is rapidly growing and gaining visibility with the current concerns of climate change and tsunamis. Again, with the background of climate change, Seaview Sensing has seen a surge in interest from the renewables sector, which is set to become a key market. Gaining concurrent, long-term wave, wind and current data over a large area may not only help in feasibility studies and system design, but also allow refined application specification and aid installation, so reducing costs.

Product Range Description

Seaview Realtime Software

Seaview Realtime Software processes phased-array HF radar data to provide real-time measurement of surface currents, waves and winds, and creates maps, time-series plots and directional spectrum wave plots with high temporal and spatial resolution and large area coverage, up to 250km offshore. The data are calculated at multiple grid points across the coverage area; this could be 300 high-quality data points across an area of 500 to 20,000km².

For clients with requirements for met-ocean data that do not have or do not want to operate a radar, Seaview partners with the best radar supplier for your application to provide your required data. The data are provided on-line using the Seaview Data Viewer for ease of real-time monitoring and data download. This is ideal if investment in a radar is not appropriate at the time.

Consultancy

Seaview benefits from a highly technical base. Professor Wyatt, herself an internationally recognised leader in this field, is backed up by a very highly qualified and experienced team. This in turn provides Seaview's customers with expert advice at any stage of their work, either through support packages or uniquely defined consultancy projects. Typically, these are regarding the use, choice and installation of HF radar systems, interpreting the met-ocean data and ensuring the validity of results.

Data Provision

For clients with suitable radars, Seaview can take radar Doppler spectra and then return the fully processed met-ocean data via the internet using the Seaview Data Viewer. This is a useful service for short-term data requirements. Some customers have experienced Seaview software this way before investing in a complete system.

Working with Buoys

The Sheffield-based team operates on a global scale. Currently, the company has installations around the world including the north-west and north-east Atlantic, North Sea, Indian Ocean and Coral Sea, Australia. There are also new installations in the pipeline.

Seaview is also noticing that companies already employing wave buoys are increasingly looking at Seaview real-time software to work in addition to, or instead of, their buoys. This is because data are provided over a field rather than at a particular point and, as the system is

land based, avoids costly buoy rescues and replacements. Providing complete wave spectra, current and wind data measured at many locations across the radar field allows the Seaview system to show the true variation across the site unlike the single-point measurement available from buoys and, in the case of waves, model systems employed by direction-finding radar. This may be of particular interest in an area of varying bathymetry or coastal features.

Cutting-edge Science and Continuous Innovation

Seaview has always worked closely with its customers, often providing support before a project begins to help define requirements. Seaview understands the necessity of meeting those needs; this is often achieved by means of customisations. They support their customers throughout installation, commissioning and use, and are seeing customers' appreciation of this in repeat orders. The company is committed to cutting-edge science and continuous innovation for the benefits of customers in the environmental and non-military sectors.

International Growth

Seaview's market is very much global, with systems already operational in North America, Europe, the Middle East and Australasia. This pattern looks set to continue as interest is increasingly shown both at home and abroad.

Sensing the Future

With further installations planned around the world and strong interest from a variety of sectors, particularly the renewables market, the Seaview team is delighted that its software and expertise will be benefiting so many organisations.

<https://www.hydro-international.com/content/article/sensing-seas-with-seaview-sensing-ltd>
