Wisense® Ocean is a complete remote monitoring platform that supports the deployment of low-powered distributed networks of sensors for real time remote monitoring and control of oceanic, environmental, security and military applications. Wisense® Ocean applications can scale to hundreds of sensors deployed both underwater or on sea surface with increased robustness to harsh environmental conditions. The system offers a cost-effective scalable solution which can be easily integrated to monitor existing systems and processes. Wisense® Ocean supports a wide range of existing analogue and digital sensors and is used to measure an almost unlimited amount of oceanic and environmental parameters. Wisense® Ocean consists of four subsystems; namely the Wisense® Data Buoy, the Secure Remote Data Storage Server, the Data-View Remote Monitoring Web-platform and the Automatic Notification and Alert system.

Smart Ocean Technologies provides the Wisense® Data Buoy as a base buoy with various enhanced and customized versions for specific applications.
The Wisense® Remote Monitoring Platform provides real-time data access, data management and sensor network control capabilities:

**01' WISENSE® DATA BUOY**
The Wisense® Data Buoy is a floating sensor platform, data logger and gateway to a remote data server. The Data Buoy utilises an ultra compact powerful embedded system which supports the aggregation of sensor data, storage in a local database and the transmission of the data to the secure remote storage server. The Data Buoy is highly versatile and can be easily deployed in completely isolated environments for various water monitoring and environmental applications. The system is self powered and can be deployed as a standalone unit or as a sensor node of a wireless sensor network.

**02' SECURE REMOTE DATA STORAGE SERVER**
The Wisense® data buoy transmits the collected data to a secure remote data server for backup but also for allowing real-time monitoring of data via a standard web browser. The system supports various processes to run on the remote server such as: Daily sensor health reporting, Automatic alerting mechanism, Data processing for significant event detection, Embedded data analysis according to application, Over-the-air reconfiguration of the sensor network and many more.

**03' DATAVIEW MONITORING WEB PLATFORM**
The Wisense® Remote Monitoring Web-Platform provides a fully customisable interface to the users for controlling their deployments and accessing their data in real time from nearly everywhere in the world. The platform offers various features such as: a dashboard feature for critical parameter display, a historical data processing feature for embedded data analysis and trend chart display, a data export feature for exporting data in various file formats and a map-view feature for buoy visualisation through embedded interactive Google maps.

**04' USER DEFINED NOTIFICATIONS & ALERTS**
The Notifications and Alerts feature provides clients with the capability to establish alert thresholds according to desired operation scenarios of sensors and to specify alert notification text messages and emails. Alerts may be sent to any email-enabled desktop computer or mobile phone. The user can also set-up periodic information messages to report on the health and performance of the sensor network and the values of vital parameters.

**Data Communication Options:**
- GSM, GPRS, 3G, radio and Satellite communication options
- Programmable database server update rates for minimizing operational cost and power consumption
- Smart battery monitoring automatically adjust update rates for energy saving
- Advanced smart antenna technology for longer communication range
- The Buoy can directly transmit to server or can be a part of a buoy wireless sensor network

**Solar powered system:**
- Basic data-buoy comes with total of 240 watts solar panels
- 180 A-Hr sealed deep cycle lead acid battery as standard option
- Solar charge regulator
- Fully customised powering module according to application
- Fully power autonomous system
Low cost oceanic and environmental remote monitoring platform:

The WiSense® data buoy is a low cost, low-powered, autonomous floating sensor platform, data-logger and gateway which provides a versatile and fully customisable remote monitoring solution for oceanic applications. The system can be easily installed offshore or inshore for real-time remote monitoring of vital water-quality, environmental and weather parameters. The buoy is self powered and can be deployed in completely isolated environments as a standalone unit or as a sensor node of a wireless sensor network. This robust floating platform can be easily tailored to the client’s needs by selecting different sensors according to the application and different data logger, powering and communication options.

A cost-effective solution for your remote oceanic and environmental monitoring applications:

- Robust construction requiring no regular maintenance
- Stable design to withstand storms and high winds
- Modular and light construction, making equipment replacement and transportation easy
- Through hull waterproof enclosure for electronics
- Range of towers for sensor and solar panel deployment
- Easy integration of a wide range of environmental, weather and water quality sensors
- Integrated lifting points for easy launch/retrieval
- Single point mooring with integrated mooring tackle for inshore and offshore applications

Data Logger and Gateway main features:

- Data Logger with >2Gb storage space
- Ultra low powered, fanless and vibration robust embedded industrial computer
- Fully customized embedded Linux operating system
- Programmable sensor sampling and data communication rates according to application and energy consumption
- GSM/GPRS/3G/Satellite communication to remote data storage server
- Image/Video capturing through event driven camera
- Open Architecture design enables easy integration of a wide range of sensors

The floating platform supports both topside and underwater environmental monitoring sensors:

- Solar radiation
- Wind speed and direction
- Air temperature
- Relative humidity
- Barometric pressure
- Precipitation
- GPS receiver
- Rain
- Underwater camera
- Dissolved oxygen
- Turbidity
- Chlorophyll
- pH
- Salinity
- Water temperature
- Depth
- Conductivity
- Many more
Wisense® Ocean DataView is a fully customised web-based monitoring platform that enables clients to monitor and control their remote oceanic applications in real-time from anywhere in the world. The platform facilitates data acquisition from a wide range of commercial sensors and provides a real-time display of the readings as information flows into the system. DataView enables users to display trend charts of multiple sensors across selectable time periods and to export the data to databases, text files and Ms Excel spreadsheets.

Wisense® Ocean Android application is a specifically designed application for the mobile user. The system which supports both android operated tablets and smart phones enable monitor and control of oceanic deployments in real-time and on the go. The android application is linked with the Wisense® platform and supports a wide range of information display options such as real-time and historical data charts, trend charts and images from the buoys which are displayed through interactive Google maps according to their geographical location by means of GPS coordinates.

About Us

SignalGenerix has grown out of several decades of industrial experience and consulting mainly in the UK. It was formed in Cyprus with a vision to become a leader in delivering state-of-the-art Digital Signal Processing (DSP) and Communications solutions. The company is deeply involved in Research and Development and has amassed a broad portfolio of intellectual property rights covering core signal processing algorithms, telecommunication networks, and wireless sensor applications. The company’s ultra-low-powered hardware, novel smart antenna components and remote monitoring platforms are incorporated in commercial systems and processes for modern high-tech industries such as the Communications, Marine, Medical, Security, Military and Environmental Monitoring industries as well as more traditional industries such as Agriculture and Farming.