



Safe navigation | Safe cargo | Safe port

Marine Transport

XYLEM ANALYTICS MONITORING & MARKING SOLUTIONS

xylem
Let's Solve Water

Coastal Research

Environmental Monitoring

Recovery

Dredging

System Integration

Oceanography

ODAS Buoys

HYPACK hydrographic software



Lanterns

- Fixed
- Buoy mounted
- Up to 30-degree vertical divergence
- LED
- Upgrades

Buoys

- AtoN
- Data buoys
- AIS
- RACON

rQPOD

- Remote controlled
- Autonomous and manual surveying

EXO multi parameter sonde

- Full suite of water quality parameters
- Antifouling

IMPROVE NAVIGATION SAFETY AND PORT EFFICIENCY

- Provide the Harbour Master with a complete real-time overview of conditions affecting traffic
- Mark safe passages in and out of port
- Understand port dynamics with updated surveys
- Know current, wave, and weather conditions in real-time
- Dynamic tracking of pollution events and water quality
- Lower insurance costs against environmental and docking damage with documentation
- Provide critical information to stakeholders before, during, and after natural disasters or accidents
- Enable research with current and historical environmental data
- Minimize maintenance costs with long deployment sensors

Ports & Harbours

Weather Monitoring

Harbour Monitoring

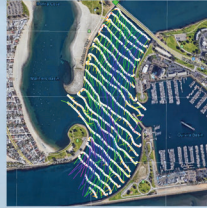
Navigation Buoys

Oil Spill

AtoN

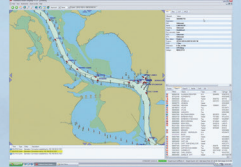
Real-time communication from Xylem Hyd/Met system distributed by AIS system

HYPACK hydrographic software



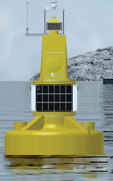
GeoView environmental data

Smart Display AIS Viewer



MOTUS Data Buoy

- Met
- Currents
- Wave
- Environmental
- AIS



VTS Office



SmartGuard Datalogger



Real-time communication from Xylem Hyd/Met system

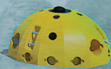
HydroSurveyor

- Autonomous and manual surveying



SeaGuardII Doppler Current Profiler

- Current speed & direction in many layers
- Water level
- Significant wave height
- Wide range of parameters available



Argonaut-SL500 profiler

- Mooring assistance for Shipping



CastAway-CTD

- Speed of sound
- Salinity understanding through the profile



CUSTOM SOLUTIONS FOR ENVIRONMENTAL MONITORING AND ATO N

- Wave and multilayer current monitoring systems
- Water quality monitoring systems
- Hydromet systems
- Buoy, lantern, and AIS systems
- Autonomous survey systems and software
- Real-time data access via web or AIS

MOTUS Wave Buoys

The MOTUS (movement in Latin) Wave Buoy is a perfect solution for collecting environmental data in coastal areas. The platforms used for collecting data are the robust Tideland SB-138P Aids to Navigation (AtoN) buoy and the robust EMM 2.0 buoy from YSI. Both platforms have proven to be excellent platforms for providing high accuracy and reliable meteorological and oceanographic data.

EMM 2.0 - Coastal Buoy

The YSI EMM 2.0 is one of the most versatile and reliable buoy solutions on the market. These buoys have been deployed with wet-chemistry nutrient and metal analyzers, current meters, water quality monitors, GPS, atmospheric sensors, wave sensors, hydrocarbon sensors and more.

Tideland SB-138P Sentinel® Buoy

The SB-138P Sentinel® buoy is a product of Tideland Signal's continued commitment in developing new higher performance, low maintenance, cost effective marine aids to navigation. Deployed in over 40 countries, the SB-138P buoy utilizes the benefits of the latest in materials, manufacturing processes and technology. It provides a rugged, lightweight buoy with exceptional station-keeping and long life, while reducing the long-term maintenance expense typically associated with floating aids to navigation.



Modular Remote Survey Boat Systems

rQPOD

The rQPOD is a modular system that when attached to a standard size Torrent Board housing SonTek M9 system, transforms into a motorized platform facilitating remote shore operation for easy collection of ADCP data. Using SonTek RiverSurveyor live software, the user can collect river discharge measurements or undertake a full bathymetric survey using HYPACK software.

HYCAT

Developed in partnership by YSI and SeaRobotics, the HYCAT Autonomous Surface Vehicle (ASV) combines products from multiple brands to provide a total solution for your site. Sensors have plug-and-play capabilities, allowing the HYCAT to be customized to your specific site needs. The HYCAT can also be easily deployed with two people in remote locations, not requiring ramp/dock launch access. The capabilities of this ASV includes: side scan sonar, water quality, bathymetry and real-time positioning.



Water Quality Monitoring

Aanderaa® Smart Sensors

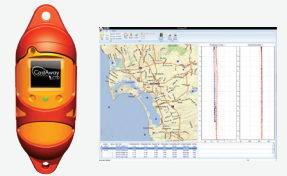
Aanderaa Smart Sensors process data, including linearization, scaling and necessary compensation in the sensor to output engineering values. Sensors available are serial and AiCaP bus sensors; Doppler Current Sensor, Oxygen Optode, Turbidity (Analogue), Pressure/Tide/Wave, Conductivity/ Salinity and Temperature Sensors.

SonTek® CastAway CTD

The SonTek CastAway CTD is a handheld deployable conductivity, temperature and depth instrument for hydrographic profiling. An integrated LCD screen displays an intuitive user interface for deployment and immediate review of collected data including both statistics and profile plots.

YSI® EXO2 & EXO3 Multiparameter Water Sondes

The EXO multiparameter water quality sondes are developed by YSI for challenging marine and freshwater conditions. Biofouling control for extended deployments with Wiper and copper-alloy parts. Ammonium (freshwater), Barometric pressure, Chloride (freshwater) Conductivity/Salinity/Temperature, Depth, Dissolved Oxygen, fDOM, vented level, Nitrate (freshwater) pH/ORP, Total Algae, Turbidity, TDS/TSS calculated and/or user referenced samples.



Current and Profiling Solutions

Aanderaa® In-line Doppler Current Sensor

The In-line Doppler Current Sensor hub is a robust and compact solution available for ocean current and other parameters measurement at different levels in the water column, in string systems, Hyd/Met solutions, winch operated systems and berth/docking stations.

Aanderaa® SeaGuardII Doppler Current Profiler

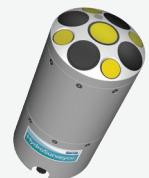
The SeaGuardII DCP is a Doppler current profiler with multi-sensor capabilities and a range of up to 80 meters depending on local conditions. The instrument can be used bottom mounted or upside down from e.g. buoy or string.

SonTek® HYDROSURVEYOR®

The SonTek Hydrosurveyor is a five beam ADP designed to collect bathymetric, water column velocity profile and acoustic bottom tracking data as part of a hydrographic survey.

SonTek®-SL Side-Looker Doppler Current Meter

The SonTek Side-Looker is a long-term monitoring solution available in three models for horizontal profiling and water level combined in one single instrument.



Aids to Navigation (AtoN) Systems

AIS & Remote Monitoring

Many AtoNs are now fitted with an Automatic Identification System (AIS). AIS transmits vital information about the asset location to all AIS equipped vessels within the area. In addition AIS can also be used for remote monitoring and can accompany our Satellite, GSM and VHF monitoring systems. AIS is also used to transmit vital weather and sea condition data.

Beacons

A range of LED Beacons are available with one to three tiers of LED optics providing ranges from 3NM to 18NM. Available in all IALA colors the lanterns have options of synchronization and remote monitoring capabilities.

Buoys

Buoys are one of the most important items used to mark channels, obstructions and safe water. Tideland has a complete range of buoys from 600mm to 3000mm diameter for use in various sea conditions, depths and currents.

PEL and Range Lights

A selection of PEL and range lights are available for general or high precision marking. All designs feature LED illumination, variable vertical and horizontal divergence, monitoring capabilities and synchronization. Ranges are designed based on customer requirements and can exceed 24NM.

RACON/e-NAVCON – World's first combined AIS and RACON

SeaBeacon® 2 System 6, a frequency agile radar beacon (racon), provides dependable service to all marine radars, including those with modern narrow band receivers. e-NAVCON combines the SeaBeacon® 2 System 6 with an inbuilt AIS AtoN transponder to provide the mariner with two forms of electronic signatures, one of which is independent of the GPS network increasing accuracy and redundancy.

Rotating Beacons

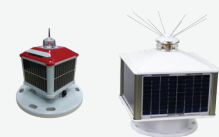
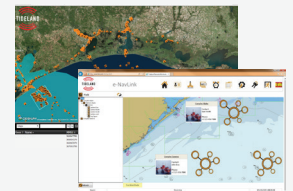
Tideland pioneered the design of optics for high performance rotating beacons. Options are available with LEDs or incandescent lamps. Ranges depend upon flash character required and can exceed 20NM. Options of AC or DC power are available with full monitoring and control.

Remote Monitoring & Control Systems

NavLink and TSD AIS Viewer are world class monitoring systems that provide users with evidence of regulatory compliance and safety of their important aids to navigation. Important warnings can be sent via text or email and historical reports can be extracted.

Self-Contained Lights

With vertical divergence from 5°C to 30°C and ranges from 3NM to 7NM, the SolaMAX-65 offers the widest range on the market. Options include internal AIS, GSM Modems and GPS synchronization. The SolaMAX-3 is our cost effective solution for smaller ranges up to 3NM and includes the latest in LED and battery technology.



Water Level Monitoring

Aanderaa® Vented Tide, Pressure & Wave

The Aanderaa vented sensors are compact fully integrated sensors for measuring pressure, tide or wave conditions based on measuring the hydrostatic pressure and water temperature in a fixed submerged position. The pressure transducer is vented for automatic correction for atmospheric pressure.

YSI® Radar

Designed for non-contact water level measurement, the Radar series incorporates an LCD display, low current operation and a high accuracy data with an out-of-the-box measurement range of up to 70m.



Controllers & Software

Dataloggers

Aanderaa® SmartGuard

The SmartGuard is a datalogger designed for easy set-up and integration with Aanderaa sensors as well as a range of third party sensors. It is tailored for Hyd/Met stations and for use on data buoys with a wide range of telemetry options such as 3G modem, AIS, VHF/UHF radio, Iridium and GOES.

YSI® Storm 3 Data Logger

The Storm 3 datalogger incorporates a balanced set of inputs for analogue, digital I/O and SDI-12 smart sensors to allow communication through cellular modems and GOES satellite. It is easy to configure the Storm 3 and to log data using the browser based graphical user interface (GUI) with all standard web browsers on PCs, tablets and smartphones.



Software and display solutions

Aanderaa® GeoView

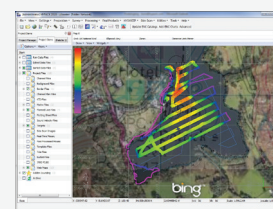
GeoView is a web-based display solution for environmental data display and is a part of the Aanderaa Real-Time solution. This gives the user vast opportunities for interfacing meteorological, oceanographic or other environmental research equipment in a networked solution giving access to data real-time.

HYPACK® Hydrographic Software

HYPACK is one of the most widely used hydrographic surveying packages in the world, with more than 10,000 users. It provides the surveyor with all the tools needed to design their survey, collect data, process it, reduce it, and generate final products. Whether you are collecting hydrographic survey data, environmental data, or just positioning your vessel in an engineering project, HYPACK provides the tools needed to complete your job.

YSI® Storm Central Hosted Data Solution

YSI Storm Central is a cloud-hosted solution that allows you to view and download data from any computer or mobile device with an Internet connection. Data from the datalogger is pushed to Storm Central on regularly scheduled intervals. Analyzing near real-time data is made simple in graphical, as well as tabular format. This platform provides an easy-to-use, simple approach for remote hydrological and meteorological data collection.



Xylem |'zīləm|

- 1) The tissue in plants that brings water upward from the roots;
- 2) a leading global water technology company.

We're a global team unified in a common purpose: creating advanced technology solutions to the world's water challenges. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. Our products and services move, treat, analyze, monitor and return water to the environment, in public utility, industrial, residential and commercial building services settings. Xylem also provides a leading portfolio of smart metering, network technologies and advanced analytics solutions for water, electric and gas utilities. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise with a strong focus on developing comprehensive, sustainable solutions.

For more information on how Xylem can help you, go to www.xylem.com

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Marine Transport is a joint description of the equipment Xylem Analytics offers to Ports and Harbours, Coastal waterways, Inland waterways and more.

