

Smart Buoy Concept

More than just an AtoN

SeaHow[®]
by Arctia



The buoy of future with smart features

Conventional Aids to Navigation are history, relics from the times before internet and e-Navigation. The general tendency for Internet of Things will change the navigational marking as well.

Smart Buoy is connected to network and capable for interactivity. The idea is to encapsulate electronic devices inside the buoy body without external components being exposed to damages.

The robust and stabile polyethylene body can be deployed offshore. The production process of the buoy is adaptive and enables easy customization for various kind of device configuration.

The buoy can be used for many applications, like 1) land based AtoN management, 2) on-line monitoring of oceanographic data, 3) radio link for data transfer and 4) offshore location reference.

Monitored data is transmitted to cloud-based SeaHow central system by available network. Optionally the data can also be delivered to Customer's own system.

Area of use

- Remote AtoN management
- Offshore monitoring station
- Remote ROV operations
- Unmanned ship systems
- Sulfur Sniffers



Smart Buoys



Real-time data for Mariners

Oceanographic data on bridge enhances safety of navigation. Smart Buoys used along the fairway can provide critical navigation data continuously.

IMO 2020 global sulfur limit and ECAS might require Smart Sniffer buoys. The future of Unmanned Ships most likely will require smart fairways.

Remote AtoN management

Smart Buoys save maintenance costs. The lights can be turned on or the intensity can be increased from ashore or remotely by the Pilots whenever needed.

Via SeaDatics software 1) the lantern can be adjusted 2) the buoy location monitored on-line and 3) an notification received in case of malfunction.

Remote ROV-operation

Remote ROV-operation requires a radio-link solution that is easy to deploy and can tolerate rough handling without external parts exposed for damages.

Because of the robust monolite structure and excellent stability in high seas the SeaHow Smart Buoy is ideal solution for an offshore Radio-link station.

Environmental monitoring

For the protection of sensitive marine environment accurate and dynamic up-to-date data is essential and requires regular monitoring.

On-site monitoring can start from pre-construction through all the phases of a construction project and continuing to post project monitoring as required.

We can produce a buoy adaptable for almost any sensor

Default sensors available for monitoring

Parameter	Sensor	Range	Resolution	Accuracy
Temperature	YSI	-5..+50°C	0.01°C	+0.15°C
Conductivity	YSI	0..100 mS/cm	0.001 mS/cm	+0.5%
Salinity	YSI	0..70 ppt	0.01 ppt	+1%
Dissolved Oxygen	YSI	0..50 mg/l	0.01 mg/l	+2%
Turbidity	YSI	0..1000 NTU	0.1 NTU	+2% or 0.3 NTU
Algae chl-a	YSI	0..400 µg/l	0.1 µg/l	-
Algae Cyanobacterial	YSI	0..280 000 cells/ml	1 cell/ml	-
Height of Tide	Aanderaa	0..20 m	<0.0001%	+0.02%
Wave height	Aanderaa	0..20 m	<0.0001%	+0.02%
Current speed	Aanderaa	0..300 cm/s	0.1 %	1% or +0.15 cm/s
Current direction	Aanderaa	0..360°	+0.35°	+5°
Oil Spill - Crude	Turner	1-1500 ppb	1 ppb	-
Oil Spill - Fine	Turner	3-3500 ppb	1 ppb	-

