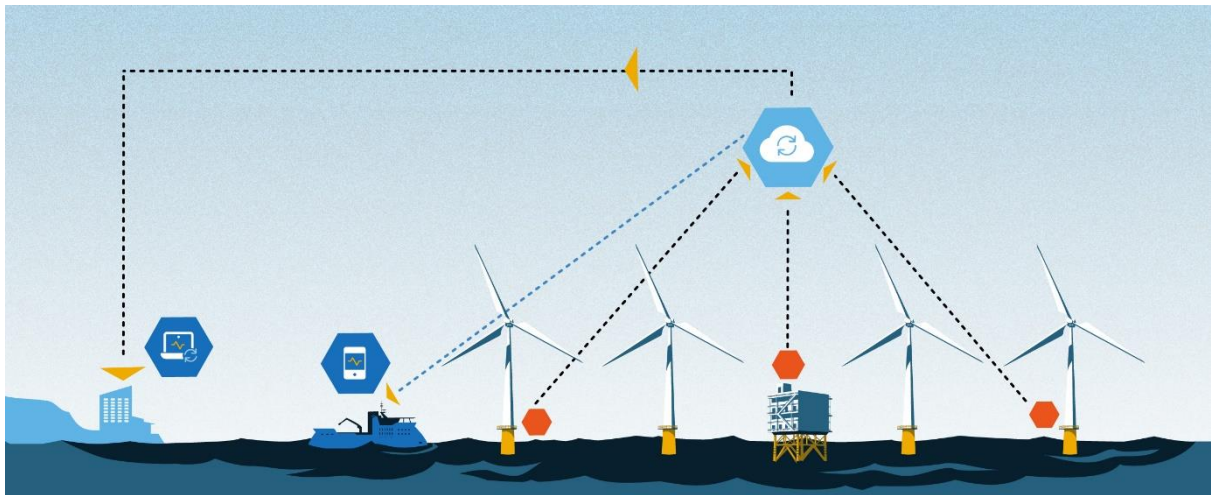


# Miros Cloud



**A Cloud- based service providing real-time ocean insight, consisting of easily accessible ocean wave, surface current, water level and other data.**

All Miros' wave sensors integrate with Miros Cloud. The Cloud functionality is based on Microsoft technologies, allowing for easy and secure access to real-time and historical data. Miros Cloud delivers reliable data to all stakeholders, on- or offshore, and on any device.

Miros Cloud simplifies data collection and remote access to collected data. It also enables various services such as real-time dashboards, data streaming and download capabilities, weather forecasts, tide charts and AIS data.

Miros Cloud is a subscription service working in combination with purchased Miros wave sensors or subscribing to such data. For a total subscription package, see Miros Sea State as a Service on our website or the Sea State as a Service data sheet.

## **Key features:**

- Secure, reliable and easy access to data anywhere via the internet
- Cloud-integration allows for enhanced scalability and user access on- and off-shore
- Data is hosted centrally in the Cloud
- Data streaming & download capabilities
- Application or client specific UI

## **Benefits:**

- Low upfront costs due to the as-a-service pricing
- Quick setup and deployment, the cloud offering is truly plug and play
- Cost-effective, remote upgrades and online diagnostics
- No additional maintenance costs.
- Enables Sea-State-as-a-Service

## WEB GUI examples:



Versatile GUI's for all platforms, from PCs to phones.

Data is integrated into the Miros Cloud, making it immediately accessible anywhere, without the need for any external processing. Easy access to data from multiple sites.

Application and sensor specific Web based UIs. User configurable data history and data range. Visual operational alarms are available for selected parameters, with user configurable warning and alarm limits.

Miros Cloud enables easy integration with tidal tables, weather forecasts and other relevant data sources. Selected data may be manually downloaded.

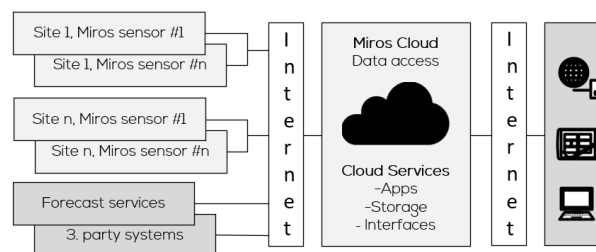
## SPECIFICATIONS

### Core functionality:

Sensor Interfaces	Miros IOT enabled sensors 3. party sensors via Miros Edge <sup>1</sup>
Multi-site solution	Yes
User Interface (UI)	Generic views and application specific views. Customization on request
Operational alarms	Visual alarms with two threshold levels, warning/alarm.
Data storage	1 year of processed data <sup>2</sup>
Data download	User selectable data and time period via UI. Downloadable as CSV or JSON files
Real time data push	CSV or JSON files via FTP and other optional protocols
IT security	Encrypted data transfer. Security functionality provided by Microsoft Azure platform.
Access control and passwords	Microsoft Active Directory or other similar service.
<b>Communication:</b>	
Sensor – cloud	https
Cloud to web user	https
Data uploading interval	Typically, every 60 seconds. Depending on sensor/ parameter.

### Device and system remote management

Onboarding (initial setup)	Remote onboarding supported.
Sensor configuration	Remote configuration possible via device twins in Miros Cloud.
Support	E-mail support included.
Software upgrades	Included



### Optional functionality:

User defined UIs	On request
Wave separation. Wind and swell seas from Miros' directional wave sensors	From 2020 Q1
Forecast services	Depending on local availability: <ul style="list-style-type: none"> <li>• Tidal forecasts</li> <li>• Weather forecasts</li> </ul>
AIS input	Yes
Cloud interface to third party systems	<ul style="list-style-type: none"> <li>• Data push via FTP (CSV &amp; JSON files)</li> <li>• MQTT protocol</li> <li>• AMQP protocol</li> <li>• Modbus</li> </ul>

### Accessories and options:

4G Modem	Available on request
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### Notes

1. Available sensors: Wind sensor and weather sensor  
Contact Miros for complete range or special requests
2. Standard. Longer storage duration on request

*Specifications are subject to change without prior notice.*