SENSORS — WAVE MEASUREMENTS

Wave sensors - general overview.
- The industry standard for Wave measurements is to use a buoy moored freely in the ocean, transmitting data to shore or a nearby platform. This method has operational limitations that in many cases require other solutions. For offshore use, several other solutions based on down-looking radars or lasers exist and work reliably, depending upon location. Also systems based on using horizontally looking radars, even standard X-band ships' radars, have been used as well as up-looking ADCP sensors and pressure sensors.

Wave Buoy sensors
- A+D have available several types of Wave Buoys with complete mooring systems designed for specific water depths. Such buoys can typically measure Wave Height, Period and Direction.
Additional parameters, such as Sea Temperature and others can be added upon request as well as tracking devices to avoid loss of buoy.

WISE Buoy - MetOcean Buoy with all options
- A+D have developed a full-size type of MetOcean Buoy with complete mooring systems designed mainly with offshore operational support in mind. The Wise Buoy concept will support both local and remote users. A full suite of Meteorological and Oceanographic sensors are available. The WISE Buoy can be tailor-made to customers specification or application.

Onboard Wave sensors - radar sensors
- Wave measurements using a down looking narrow beam radar is a well proven method offshore, and will usually give very good results providing that an installation site with an unobstructed view of the waves can be found. Radar sensors, complete with installation frames are available to measure Wave Height and Period.
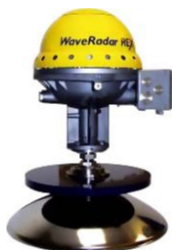
Onboard Wave sensors - with Heave Compensation
- Wave measurements using a down looking narrow beam radar, can also be used on floating platforms or vessels. A dedicated Heave sensor is installed next to the Wave radar, and the Heave signal are subtracted from the measured signal in order to show the real Wave Height signal. Sensors are available to measure Heave compensated Wave Height and Period.

Tide and Wave sensor - Stepgauge sensor

- The Stepgauge sensor is one of the most robust sensors on the market with extreme long-term reliability and low maintenance requirements. This system is ideally suited for harbours and shallow water applications, but can also be used in other applications when it is installed alongside a structure or pole.
These systems can measure Tide, Wave Height and Period.
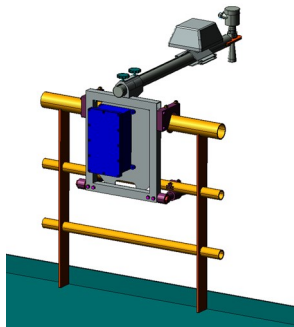
Onboard Wave radar with satellite transmitter

- The Wavesat system is a small and transportable wave radar that allows easy transportation between measurement sites, and makes this well suited as a portable wave measurement unit.
Signals can be distributed locally via UHF radio or transmitted through the Iridium global tracking satellite system to offshore or onshore users.

Onboard Wave sensor - ADCP sensors

- ADCP Sensors with Wave measurements can be deployed over the side of the vessel/platform by a winch and davit arrangement, or deployed over the side using a guideline frame arrangement. These systems will measure both Wave Height, Period and Direction as well as Surface Current Speed and Direction.
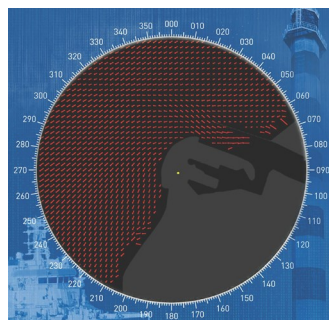
Onboard Wave sensor—Horizontal radars

- Wave measurements can also be done by extracting the wave data from horizontal radars installed onboard the vessel, by extracting data from a standard X-band ships' radar.
These systems will typically measure both Wave Height, Period and Direction and possibly also Surface Current Speed and Direction.

Wave measurements and systems - customer specified

- Measuring Waves correctly can be very complicated, and data can easily be useless if it is not done correctly. A+D have long experience in selecting and recommending the best measurement method and equipment for complex applications.
We will be happy to advise on equipment selection, measurement methods as well as to supply equipment and services.
Please contact us for details.