

AUTONAUT FOR PAM – PASSIVE ACOUSTIC MONITORING





DESCRIPTION

A collaboration between MOST (AV) and Seiche has developed a cutting edge Unmanned Surface Vehicle (USV) specifically designed for Passive Acoustic Monitoring (PAM). The AutoNaut 5M is a near silent platform. It utilises only the motion of the waves for propulsion for a mission duration of several months. It can be fitted with either a towed PAM array or a hydrophone mounted to the stern strut.

The AutoNaut is able to independently conduct long-term acoustic surveys over large coverage area to pre-set transects. Station-keeping within a 30m radius makes point sampling achievable and its manoeuvrability enables track following to within a few metres.

The AutoNaut has proven reliability and is highly responsive. These qualities allow for deployment in industrial fields of operations as well as suitability for acoustic-based studies on marine life. Up to 6TB of acoustic data can be stored on Seiche's digital recording system. Alternatively, a Wireless PAM system can be installed for true real-time remote monitoring. >>>

APPLICATIONS

-  Baseline monitoring of marine mammals
-  Baseline monitoring of ambient sound
-  Sound source verification (SSV)
-  Defence/Naval



KEY FEATURES

Near silent platform – the craft's very low self noise enables high quality acoustic data collection.

Long mission duration – several months are possible but this is fully flexible based on operations and power budget requirements.

Manoeuvrability – the vessel can follow a pre-set course, with oversight from a remote operator who can manoeuvre as required.

Unmanned operation – fully controllable from a remote location via satellite or shorter range radio. This feature removes the health and safety concerns of deploying personnel offshore.

Simple launch/deployment – can be manually launched from port or support vessel.

Dimensions (metres) –
Length: 5m, Beam: 0.8m, Draft: 0.8m.

Ample payload – design flexibility allows for additional sensors (e.g. CTD).

Zero carbon propulsion – no/negligible fuel costs.

AUTONAUT FOR PAM

PASSIVE ACOUSTIC MONITORING (PAM)

PAM Array

The specifically designed PAM array, either digital or analogue, is 30m in length and features 4 hydrophone sensors.

Strut Mounted PAM

Two hydrophones contained within a robust mould are mounted on the stern strut of the AutoNaut. This configuration is best suited to long term monitoring in conjunction with other oceanographic sensors.

DRS-PAM

The Seiche DRS-PAM system enables the recording of large acoustic datasets for offline analysis. The system is highly configurable to suit mission duration and power availability. Near real-time transmission (utilising Iridium, 3G/4G, GSM) is possible for assurance checks and/or the transfer of data in part-processed format.

Wireless PAM

Seiche's W-PAM system can be used for digital transmission of full acoustic signal for real-time monitoring. An operator located onshore or on a support vessel monitors the acoustic signal on industry standard software, PAMGuard. W-PAM can be configured in one of two modes:

- RT1: For full-bandwidth streaming and remote processing
- RT2: For local processing and remote desktop viewing