



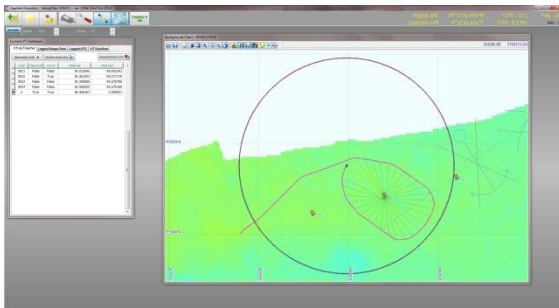
## V-Nav, Acoustic Positioning System

### Key Features



- Robust spread spectrum signalling
- Large number of beacons positioned
- Long battery life
- Operational to 600m depth
- Flexible – large/small vessels
- Wide variety of applications
- 7200 unique identities

### Positioning Applications



- Ocean Bottom Seismic cable hydrophones/geophones
- Seismic nodes
- Metocean equipment/instrument strings
- Pipe as built surveys
- Acoustic release positioning

## V-Nav, Overview

V-Nav is a system capable of accurately positioning large numbers of subsea targets marked with a new Applied Acoustics' 1400 Series Beacon. The system is easily mounted on vessels large and small and builds up a position for each target from multiple ranges.

The system is comprised of the 3510 PAM Portable, a pole mounted 3190 dunking transducer and any number of 1400 Series Beacons. The dunker & GPS input are connected to the 3510 PAM. The V-Nav software controls the 3510 PAM, processing the time stamped data into a position solution.

The V-Nav System provides near real time positioning capability. An operator can observe the data for each beacon being added to the position solution, displayed as a graphical representation, so it can be seen when an appropriate quantity and quality of data have been collected.

Information collection in difficult environments is aided by the V-Nav software's ability to take mapping, bathymetry and other types of graphical data, enabling the operator to inform the vessel crew of the optimum path for acquisition.



### Proven surface hardware

At the heart of the system is the proven 3510 PAM with its 3190 dunker. The 3510 PAM command unit is housed in a waterproof rugged enclosure with a clear LCD display and splash proof keypad for on deck operation. It has a clear and intuitive user interface and when used with a suitable laptop PC, has the benefit of a 3 hour battery life that reduces the likelihood of operational disruption.

The 3510 PAM has the added advantage of being the device used to program and test the beacons prior to deployment.

### 1400 Series Beacons

For subsea positioning, the new 1400 Series Beacon incorporates the latest robust spread spectrum signalling technology that improves the stability of operations in difficult environments. The small, lightweight, rugged beacon has been designed specifically to withstand harsh conditions and features a distinctive 'snap-together' housing. With over 7200 unique identities, the beacon can be easily set up on deck using the 3510 PAM. For ease of use, no internal switches or configuration via a connection is required.

### V-NAV Software

The V-Nav software is the specialist software used to process data that calculates the final position of each of the numerous beacons in array, and, therefore, the object to which each is attached. The software uses part of the well proven algorithm from the Applied Acoustics' Easytrak 'EasyCal' software.

In addition, V-Nav software

- Has the ability to display chart and bathymetric data from DXF, GeoTIF, XYZ etc.
- Is adaptable geodetically
- Supports customisable and standard spheroids, datum shifts & projections
- Uses simple CSV format for importing and exporting positions

## Technical Specification

### 3510 PAM PORTABLE CONTROL UNIT

Physical	390mm x 310mm x 170mm (LxWxH). Weight, 5kg
Temperature	Storage -20°C to +60°C Operation 0°C to +40°C
External power supply	Input 100-240Vac, 50-60Hz Output 24Vdc
Battery life	6 hours test mode, 3 hours V-Nav mode
Release compatibility	AAE 1500 Series & 529P Status/Command/Configure/Release

### 3190 DUNKING TRANSDUCER

Robust transducer with integral cable and transducer protection cage.

Dimensions	88mm Ø x 280mm, excluding cable gland
Weight	6kg
Cable length	30m standard (up to 100m can be specified)
Depth rating	100m

### 1400 SERIES BEACON

Dimensions	63mm Ø x 410mm
Weight	1.5kg air/1.0kg water
Depth:	600m
SPL	184dB typical
Beam pattern	+/-90°
Battery life	>18 months, subject to environmental conditions
Channels	7200 Unique spread spectrum AAE identities



Due to continual product improvement, specification information may be subject to change without notice.  
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