

Diver Tracking System

MicroNav USBL Tracking and Positioning

Low visibility conditions, obstructions and poor environmental conditions increase risk factors for the diver, and present the diving support team with significant challenges in maintaining diver safety.



Case Study | Application

Features & Benefits

- Cost-effective diver monitoring solution
- Real-time monitoring of up to 15 divers simultaneously
- Accurate bearing, range and depth and GPS position information
- GPS marking of target locations and/or setup of search grids
- Compact, lightweight and easy to deploy
- Can be used with a fixed or moving transducer
- Integrates with other Trittech sensors

Trial of MicronNav USBL System in Diver Tracking by San Diego Harbour Police Dive Team

Location: Shelter Island, San Diego, CA

Trial Overview:

The USBL system was pole mounted on the port stern quarter of a patrol boat and set to a depth of 3ft below the water line. Water depth in the harbour varied between 15 - 35ft. The pier being operated from faced a rip rap with a swift current of approximately 3-5 knots.

The diver was fitted with a MicronNav transponder and the diver support team then tracked the diver and monitored the system's performance whilst the diver:

1. Manoeuvred around the pier positioning himself between pylons and transducer.
2. Followed the bottom contour to determine the effect of varying depth.
3. Positioned himself so as to block direct line of sight between the transponder and transducer.

Conclusion:

Despite efforts by the diver to hamper or prevent tracking, the system was able to maintain effective and accurate tracking.

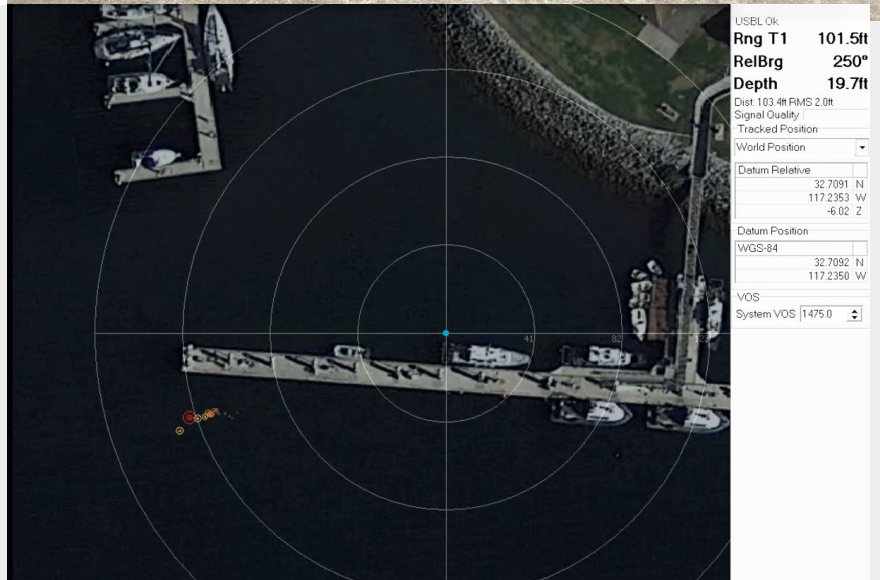
The trial demonstrated the reliability of the system in tracking divers, thus greatly increasing diver safety as well as providing the topside support team with a high level of overall situational awareness.

Diver Tracking System utilising USBL

1. MicronNav Transponder/ Responder
2. Surface USBL transducer with integral magnetic compass
3. Surface MicronNav 200 interface hub



Image from the Diver Tracking System interface showing divers position visually, as well as displaying range bearing and depth data.



How the Technology Works

The MicronNav uses the very latest in spread spectrum acoustic technology and provides a robust method of communication between the dunking transducer and the vehicle responder/transponder.

The USBL transducer can provide 180 degree hemispherical coverage below the transducer, which allows vehicle tracking in very shallow water.

Omni-directional coverage is provided by the MicronNav ROV Transponder or Responder.

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Applications

1. Tracking of divers bearing, range, depth and GPS position (when a GPS is utilised).
2. GPS marking of targets located underwater such as evidence, drowning victims, UXOs.
3. System functionality allows markers to be entered for set up of search grids to ensure adequate and efficient coverage of search areas.
4. Utilisation of markers as waypoints for training divers in underwater navigation. Should a diver miss a turn during a navigation exercise, the topside support team can immediately identify the error and retrieve the diver, resulting in an increase in the safety and effectiveness of training.

