

Optimizing the Choice of DVLs for Noisy Environments



Reliable navigation and positioning underpin productive use of submerged vehicles, leading to optimized operations, expanded capabilities, and greater cost-effectiveness. For 25 years, Teledyne RDI Doppler Velocity Logs (DVLs) have been an industry-leading solution for this need. DVLs are sonar systems that accurately measure a vehicle's speed over ground and altitude above the seabed.

The high precision and fast update rates of Teledyne RDI's data have enhanced subsea operations, from high-resolution spatial surveys to low-altitude stationkeeping. Moreover, Teledyne RDI DVLs have delivered robust navigation over highly demanding terrain, such as rugged hydrothermal vent fields on mid-ocean ridges.

Field Trials

To operate reliably, a DVL must hear its signals returning from the seabed. Sometimes, an unusually noisy environment can mask otherwise workable signal strengths, causing the DVL's bottom tracking (BT) range to be unexpectedly low.

During field trials of a remotely operated vehicle (ROV), the BT range of an onboard Navigator 600 kHz DVL was about 60 m—less than the expected 90-100 m. Troubleshooting showed problematic noise and interference were heard by the DVL when the ROV was in operation. In fact, the principal culprit was narrowband noise due to the ROV's electrical system.

Read more at Teledyne Marine's [website](#).