Kraken Introduces AquaTrak Correlation Velocity Log

Kraken Sonar Systems (Canada) has launched AquaTrak, a correlation velocity log, at the Ocean Business conference in Southampton, United Kingdom. The AquaTrak correlation velocity log provides both long-range navigation and high-resolution accuracy. The flexible and modular design allows the unit to be used in a stand-alone configuration or as part of an integrated navigation system.

The Doppler Velocity Log (DVL) has traditionally been the standard choice for integration into UUV navigation systems. Until now Correlation Velocity Logs (CVL) have not affected this domination of the marketplace because of the high level of signal processing required for correlating pairs of signals in CVLs. However, recent advances in low power electronics and advanced acoustic correlation signal processing techniques now enable CVLs to offer a superior price and performance value proposition over existing DVLs.

CVLs offer many advantages over DVLs, since they can achieve high accuracy at low velocities even during hover manoeuvres. DVLs use narrow beam widths, while CVL transmitters have wide beam widths. This gives CVLs the potential to use lower frequencies thus permitting operation in deeper water; increased accuracy; reduced power requirements for the same depth and smaller form factors.

Underwater navigation is essential for a diverse range of Unmanned Underwater Vehicle (UUV) military and commercial applications. Although GPS and other radio signals have been widely used for surface vessel navigation, these technologies are ineffective for underwater navigation because electromagnetic signals are blocked by seawater. Inertial sensing is a suitable and widely used technology for underwater navigation. However, position error tends to drift in the absence of input from aiding sensors. The most successful combination for underwater navigation has therefore been to combine inertial technology with velocity measurement using acoustic sensors that measure speed from echoes reflected off the seafloor.