

HAIN - An integrated acoustic positioning and inertial navigation system

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Abstract

The HAIN system for vessel positioning is an aided inertial navigation system. The position drift that is inherent in Inertial Navigation Systems is limited by the acoustic position measurements relative to transponder(s) on the seabed. The system can be used both with SSBL or LBL position input. The HAIN provides an improved position of the vessel which both has increased accuracy and higher update rate than the original position from the acoustic measurements. This extends operational water depth and reduced battery consumption. Position output during acoustic dropout will be maintained.

The combination of Acoustic positioning and Inertial positioning is good, because the nature of their errors are complementary. The acoustics prevents drift over time, and the inertial navigation give low short term noise and faster position updates.

- The system is independent of GPS/dGPS.
- The system is also available in a version for ROV positioning for survey applications.
- The presentation shows the HAIN operational methods, benefits and accuracy figures.

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