

Acoustics – Digital, Spread Spectrum, DSP, Wideband...What does this mean for Real World DP operations?

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Abstract

Acoustic technology has progressed significantly over the last 5 years with the advent of low power, digital signal processing systems. Developments in the field have enabled complex signaling techniques to be integrated into acoustic positioning and subsea control systems. As a result of this, acoustic system manufacturers have had to re-examine their approach to offshore positioning and subsea control. This has resulted in the introduction of several terms – Digital Acoustics, Spread Spectrum, DSP, Wideband and others.

This paper attempts to provide some clarity to the user and specifier of these systems. It outlines available technology and how this can be applied to current Dynamic Positioning and Control applications. Sonardyne has extensive experience in the development, deployment and operation of these systems offshore, most recently, incorporating said spread spectrum technology. This experience has been invaluable in the delivery of a positioning system that is now providing positioning and control solutions for numerous offshore applications.

As with any system offshore it is essential that it provide reliability, redundancy and repeatability. The operational scenario for an acoustic positioning reference for DP remains one of the most challenging anywhere. This paper examines the implementation and performance of these new technologies in this environment, drawing on Sonardyne's real world experience.

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