

Title: Moving Towards a Standardized Interface for Acoustic Inertial Reference Systems

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Abstract

Modern tightly integrated acoustic-inertial position reference systems (PRS) now achieve GNSS levels of performance due to the integration of digital acoustic measurements and inertial navigation (INS) and have better accuracy, availability and integrity than ever before.

The full potential of these technological improvements to reduce vessel downtime and position measurement equipment (PME) related incidents have, in some cases, been hindered by limitations of legacy interfaces to the DP control system the majority of which date from the 1980's

This paper firstly examines the limitations of existing DP telegrams used by reference systems and then proposes updated telegram requirements that exploit the full potential of new technology such as inertial navigation systems. The paper then goes on to propose a standard for acoustic PME equipment installation considering the correct installation and integration of the deployment machine, inertial and acoustic sensors to maximize robustness.

To conclude, the benefits of an "open architecture" for PME integration using standardized interfaces is discussed and how the benefits of adopting such a standard will allow acoustic PMEs to operate to their full potential with any DP system (DPS) improving the integrity of DP operations irrespective of DP vessel type, configuration and operation.

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