

Title: Field Applications and Environmental Challenges in the Use of Radascan

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Abstract

This paper considers the Guidance Navigation 'RadaScan' system, a microwave local position reference sensor. The paper explores some of the dynamic positioning applications that the system has been employed in since its launch to market two years ago. For example, Platform Supply Vessel (PSV) operations in the North Sea (UK) against fixed oil producing platforms, and Floating Production Storage and Offloading vessels (FPSO); Operation of two PSV's equipped with RadaScan against a single installation; Long range operation by Dive Support Vessel's (DSV) at ranges greater than 700m; Operation of two vessels taking their position fix from the same transponder; Track and follow applications; The safe use of the system by a PSV alongside an FPSO during shuttle tanker operations using the Artemis system and the adoption of the system by construction and de-construction vessels.

The paper considers the extreme environments in which the system has been required to work. For example the high sea states experienced in the North Sea over the winter season and the challenges of tracking a fixed (or moving) transponder under conditions of heavy pitch roll and heave. The range of temperatures that the system has been proven to work over from high temperatures in the Persian Gulf through to low temperatures experienced in Northern Russia during winter. Finally, some of the unique working conditions that can be found next to an oil producing platform, such as steam dumps and thick fog, where a laser based system cannot cope.

Finally, the paper looks at the best working practices for achieving optimum performance with a microwave system in harsh sea environments. What are the effects of wave motion on sensor measurements? What are the technical challenges that need to be overcome to ensure that the sensor and DP system work together optimally in heavy sea conditions? What lessons have been learned in the North Sea for improving RadaScan transponder tracking, where other local and global position references are failing?

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