

Title: Novel Developments within Close Proximity Surface DP Reference Systems

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Abstract

The paper's objective is to present the latest developments within DP reference systems for close proximity operations. The paper will also focus on some important topics frequently raised by users.

An overview of different types of operations given. Many of these operations will rely on relative GNSS. However, supplementary technologies are required of different reasons. The need for other solutions that GNSS will be justified.

Supplementary technologies to GNSS are usually microwave signals or lasers. The basic features of both microwaves and lasers are discussed and capacities and limitations compared.

Some driving requirements for close proximity DP reference systems are accuracy, range, reliability and integrity. The paper includes a discussion of these driving requirements and the respective trade-offs.

The paper includes a comparison between the features of reference systems based on practical implementations of a relative GNSS, a microwave and a laser system. The comparison is based on both theoretical analyses and real life experiences.

Different signal forms, improved signal detection and more powerful signal processing is improving the performance of microwave/laser technology development. The paper presents a discussion of these improvements based on the driving requirements including important risk aspects.

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