Advantages of Using GNSS for Positioning in DP Applications

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Abstract

The GPS system has now been fully operational for more than a decade and is becoming critical infrastructure due to its wide use in all kind of applications. The Russian GLONASS system has also been available for many years, but has lacked a full satellite constellation. GLONASS will be fully operational again in 2009. And the European Union is developing the Galileo GNSS system to be operational in 2011. All these Global Satellite Navigation Systems contribute to improved performance for navigation and positioning in terms of: • Independence • Availability • Reliability • Accuracy. For DP applications these improvements in GNSS systems can be exploited through the use of additional independent reference systems for positioning, making operations less reliant on local surface and underwater reference systems. Also DP operations close to structures will benefit from the added number of satellites, reducing the likelihood of accidents such as the Grane incident in 2005, where a supply vessel collided with the Grane platform. Investigations showed that blocking of GPS signals was a major contributor to the accident. The 11-year solar cycle will have a peak in solar activity again in 2011. This will result in a disturbed ionosphere where increased number of GNSS satellites is an advantage.

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