

The Impact of GPS Modernization and Galileo on the DGNSS Service Provider and User

Author: Dr. David Russell Subsea 7 (*Aberdeen, UK*)

Abstract

Navigating or positioning using GPS has been used in the marine industry for numerous years and is now accepted as a mature technology. Over the next decade, users will see significant changes in Global Navigation Satellite Systems (GNSS) with modernization of both the GPS and GLONASS constellations plus the addition of an entirely new satellite constellation named Galileo. These changes will impact both the user and service provider due to the increased number of satellites, new signals and potential new services.

This paper investigates the impact of GPS and GLONASS modernization and the introduction of Galileo on future Differential GNSS (DGNSS) services. It reviews the current status of DGNSS services including the requirements of the user. Existing proposals for GPS and GLONASS modernization, the development of Galileo and the evolution of GNSS augmentations are examined that will allow the future performance of GNSS services to be estimated. Finally, the changes that would be required for DGNSS services to accommodate future GNSS constellations and new positioning techniques are examined.

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