



Search and Rescue Operations requirements in GNSS

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Abstract:

Unquestionably, the achievement of search and rescue operations essentially depends on the time factor therefore, Search and Rescue “SAR” operations management developed to provide high reliability, redundancy, and efficiency as to reduce the response time. It planned using the art of technology in supporting Missions management, by integrated search plans with the Global navigation satellite system “GNSS” advantages of long-term stability and absolute accuracy.

The GNSS is a highly promising technology with communication capabilities providing an enhanced Search-and-Rescue SAR-service in combination with the current Cospas-Sarsat system.

The accuracy of distress position data is fundamental to SAR missions, and the precise GNSS navigation equipment can be supportive in covering a search area prudently. Moreover, GNSS allows small electronic receivers to determine their location within a few meters using time signals transmitted along a line-of-sight by radio from satellites.

The past decade has perceived a fast improvement of several GNSSs. Some of them are already in service and GNSSs still under planning or at partial operational stage, besides others are struggled for many years until being back to full service lately. The paper illustrates the developed features of GNSS/SAR, which increase effectiveness of SAR operation with the contribution of advantages of GNSS by demonstrating between the contribution of SAR on GNSS/GPS GNSS/GLONASS and the recent SAR on GNSS/Galileo the future SAR constellation.

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