SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)
Space-Based Navigation Systems and Services (1)

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GNSS FOR DISASTER MANAGEMENT – TECHNICAL AND POLICY ORIENTED RECOMMENDATIONS

Abstract

As with many space-based systems, the Global Navigation Satellite Systems (GNSS) have evolved to provide a growing number of earth-based applications in the sectors such as navigation, defences, mapping and photogrammetry, civil use, etc., making it one of the most ubiquitous systems we use today. One of the highlights of GNSS includes disaster management capabilities in search and rescue. What would you do first when faced with a disaster? Taking a look into the user-end applications that are in place for disaster management, the next step is to merge GNSS capability with these user end application. It is essential to bring the spotlight to user-end needs in order to improve the disaster management and search rescue service. The paper will discuss current GNSS models and the respective disaster management search and rescue applications, focusing on the current workflows and response facilities.

As part of the analysis, a case study will be conducted on how GNSS is applied in search and rescue services in the Cospas-Sarsat Programme. The programme's recent goal is to supplement an existing low-attitude Earth-orbit (LEOSAR) and geostationary Earth-orbit (GEOSAR) fleets in search and rescue network by the use of GNSS (e.g. GLONASS, GPS, and Galileo). It will discuss the architecture of the MEOSAR that provides many search and rescue benefits, including enhanced SAR services, highly accurate location capability and wide coverage. Furthermore, this paper will provide recommendations for future user-end applications and an efficient workflow to provide a faster link between the satellite and end-users, as well as analyzing potential technical and policy constraints.