

SPACE OPERATIONS SYMPOSIUM (B6)
New Operations Concepts (2)

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SAR/GALILEO DISTRIBUTED OPERATIONS

Abstract

SAR (Search and Rescue) / Galileo Distributed operations

This paper describes how the European Commission is planning the deployment and the operations of the future SAR/Galileo Service. Being one of the three components of the future MEOSAR system (with SAR/GLONASS and GPS/DASS), this service and associated infrastructure will provide a significant contribution to the future Cospas-Sarsat operations.

The paper provides first a short description of the current Cospas-Sarsat system and the planned evolutions. The origins of the Cospas-Sarsat operations are about 30 years ago, when in 1982 three people are rescued thanks to the SAR forces who had been alerted through a new system based on satellites. The system Cospas-Sarsat was operationally born and demonstrated; its formal birth occurred through the signature, in 1988, of the International C/S program Agreement (ICSPA). Since then, the System has been used for thousands of SAR events and has been instrumental in the rescue of over 24,000 lives worldwide, without any service interruption. With the future availability of large GNSS satellite constellation, the space segment is going from the Low Earth Orbit (LEO) towards the Medium Earth Orbit (MEO) between now and 2020, by taking SAR payloads onboard these GNSS satellites (GPS, Galileo and Glonass).

The SAR/Galileo system will provide a robust ground segment for the processing of the relayed beacon distress signals, which will be composed by: Four operational MEOLUTs (MEO Local User Terminals) to receive the distress signals The MTCF (MEOLUT Tracking Coordination Facility) to coordinate the tracking plan of the MEOLUTs The RLSP (Return Link Service Provider) to generate Return Link Messages to be transmitted to the distress beacons through the Galileo signal. The SAR-VTB (SAR Validation Test Bench) to validate and monitor the SAR/Galileo system

It will be deployed on four different hosting sites (Norway, Cyprus, Spain and France) and therefore will provide A better ground coverage A strong redundancy (software and hardware as well as geographical) A shared responsibility between some EU State Members

The operational coordination and maintenance will be centralized in CNES under the responsibility of the SAR/Galileo Data Service Provider (SGDSP), which will operate the SAR-VTB and the MTCF, in order to enhance the robustness and the availability of the system as well to decrease the operation costs. The role and responsibilities of each hosting site will be presented as well as the interface within the Cospas-Sarsat Program operations.