



GALILEO SERVICE NOTICE #15

SERVICE NOTICE TO GALILEO USERS (SNGU): 2023004

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***** GENERAL MESSAGE TO ALL GALILEO USERS *****

GALILEO SEARCH AND RESCUE (SAR) – INDIAN OCEAN MEOLUT INFRASTRUCTURE

This Service Notice supplements the SAR/Galileo Service Definition Document ([SAR-SDD](#)) and its content will be included in the next release of the document.

In case of doubt, SAR users and other parties are invited to contact the GSC HelpDesk.

Overview

The Galileo Search and Rescue (SAR) Services were designed to support Cospas-Sarsat (C/S) in the context of the MEOSAR system (Medium Earth Orbit Search and Rescue) by detecting distress signals transmitted by beacons and relaying messages to them.

The SAR/Galileo Forward Link Service (FLS) is a geographically distributed ground infrastructure, documented in the [SAR-SDD](#) (section 3.3.3), mainly supported by three European MEOLUT Facilities deployed in Larnaca (Cyprus), Maspalomas (Spain) and Spitsbergen (Norway) operating together under the European SAR/Galileo Coverage Area (ECA). The SAR/Galileo Service is continuously monitored through the transmissions of five SAR/Galileo Reference Beacons (REFBE) located in Maspalomas (Spain), Spitsbergen (Norway), Larnaca (Cyprus), Toulouse (France), Santa Maria (Portugal).

New SAR/Galileo Forward Link Infrastructure



The existing FLS SAR/Galileo Ground Segment is extended with a fourth European MEOLUT Facility and two SAR/Galileo Reference Beacons (REFBE). The new MEOLUT and one REFBE have been installed in a new Site in the Rivière des Pluies region in the French island of La Reunion whereas the other REFBE is installed 3500km South in the French Southern and Antarctic Lands of Kerguelen Islands.

The new MEOLUT, named Reunion EU/MEOLUT, is fitted with one active phased-array antenna equivalent to 64 L-band channels or receiver elements with capability of processing Galileo and Glonass MEOSAR payloads.



Figure 1: Reunion EU/MEOLUT

SAR/Galileo Name	C/S ID	Associated MCC	Latitude [°]	Longitude [°]	Altitude [m]
Reunion/EU MEOLUT	6601	FMCC	-20.9089	55.5136	95

Table 1 - Reunion MEOLUT Facility Details

The two additional SAR/Galileo Reference Beacons, equivalent to a standard Cospas-Sarsat beacon as described in SAR-SDD (section 3.3.3.1.5), transmit 1 burst every 50 seconds for a duration of 10 minutes twice per hour on a permanent basis according to the scheme detailed in Table 2.

SGS REFBE	Beacon ID	Frequency [MHz]	Synch Start Time	Latitude [°]	Longitude [°]	Altitude [m]
GAL-EU7	9C62BE29630F1C0	406.034	HH: 20': 46"	-20.9089	55.5036	95
GAL-EU8	9C7FEC2AACD3590	406.021856	HH: 00': 24"	-49.3515	70.256	12

Table 2 – Reunion and Kerguelen Reference Beacon Details



The SAR/Galileo Indian Ocean Coverage Area

The Reunion EU/MEOLUT was approved to enter in Cospas-Sarsat MEOSAR on November 17th 2022 and started distributing first generation beacon operational alert data to the French Mission Control Center (FMCC). In addition, Reference Beacon GAL-EU7 and GAL-EU8 have also started transmitting in November 2022 and February 2023 respectively.

The new SAR/Galileo elements are the cornerstone of the extended SAR/Galileo Service Area referred to as the SAR/Galileo Indian Ocean Coverage Area (IOCA) with a declared coverage area of 2,500 km radius for all Cospas-Sarsat performance metrics as depicted in the white contour in Figure 2.

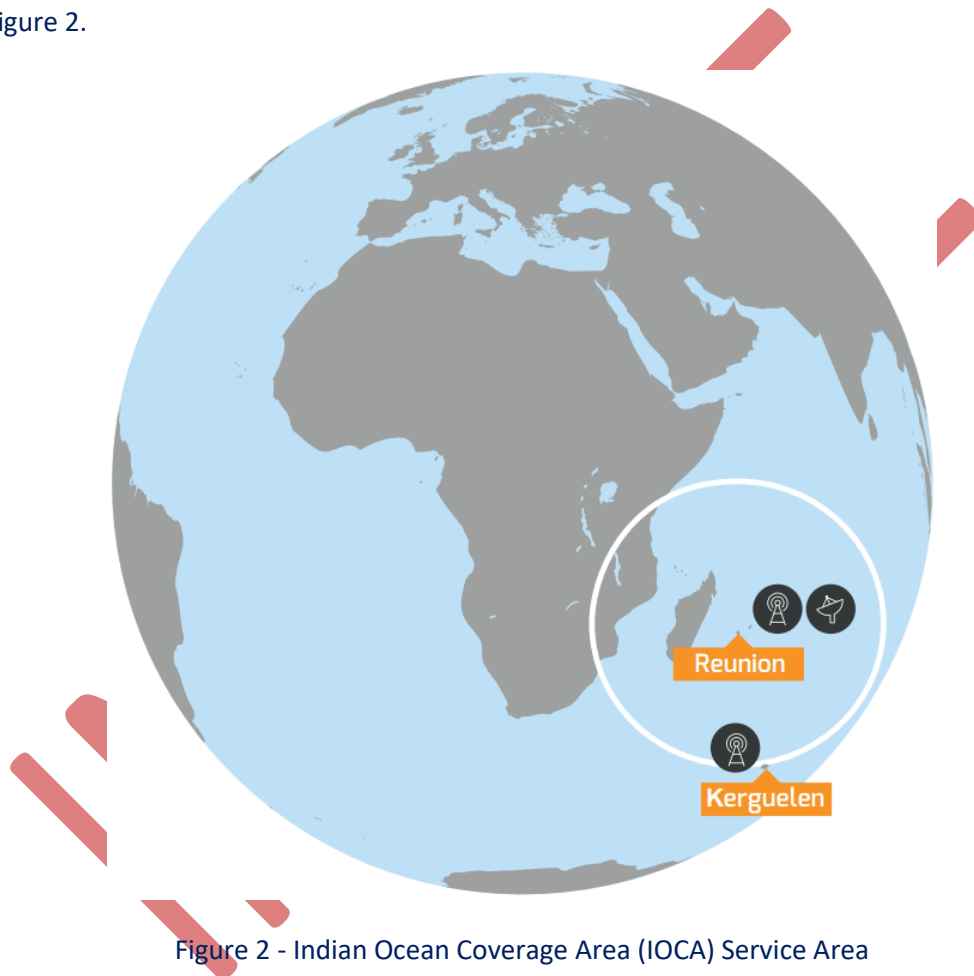


Figure 2 - Indian Ocean Coverage Area (IOCA) Service Area

SAR/Galileo IOCA Expected Performance

Table 3 below provides, for information purposes only, the SAR/Galileo Service performance users can expect from any point of the Indian Ocean Service Coverage Area. The expected values are provided for a single transmission (Single-Burst) or for up to 10 minutes or 12 transmitted bursts (Multi Burst). The MEOLUT is undergoing a dedicated SAR/Galileo Service Validation



where the metrics provided in the Table 3 will be confirmed into SAR/Galileo Minimum Performance Levels and become an integral part of the SAR-SDD.

SAR/Galileo Forward Link Service Location Performance	Expected Value	Conditions and Constrains
Reunion MEOLUT Facility Availability	> 95%	Computed annually. Including planned and unplanned outages
Detection Probability Single-Burst (Valid message)	>99%	Calculated over a calendar month. From any point in the IOCA Area defined in Figure 2
Location Probability Single-Burst	> 90%	
Location Probability Multi-Burst (12 transmitted bursts)	> 98%	
Location Accuracy within 5km in Single-Burst	> 90%	
Location Accuracy within 5km in Multi-Burst	> 95%	

Table 3 - SAR/Galileo Forward Link Expected Performance Values in IOCA

