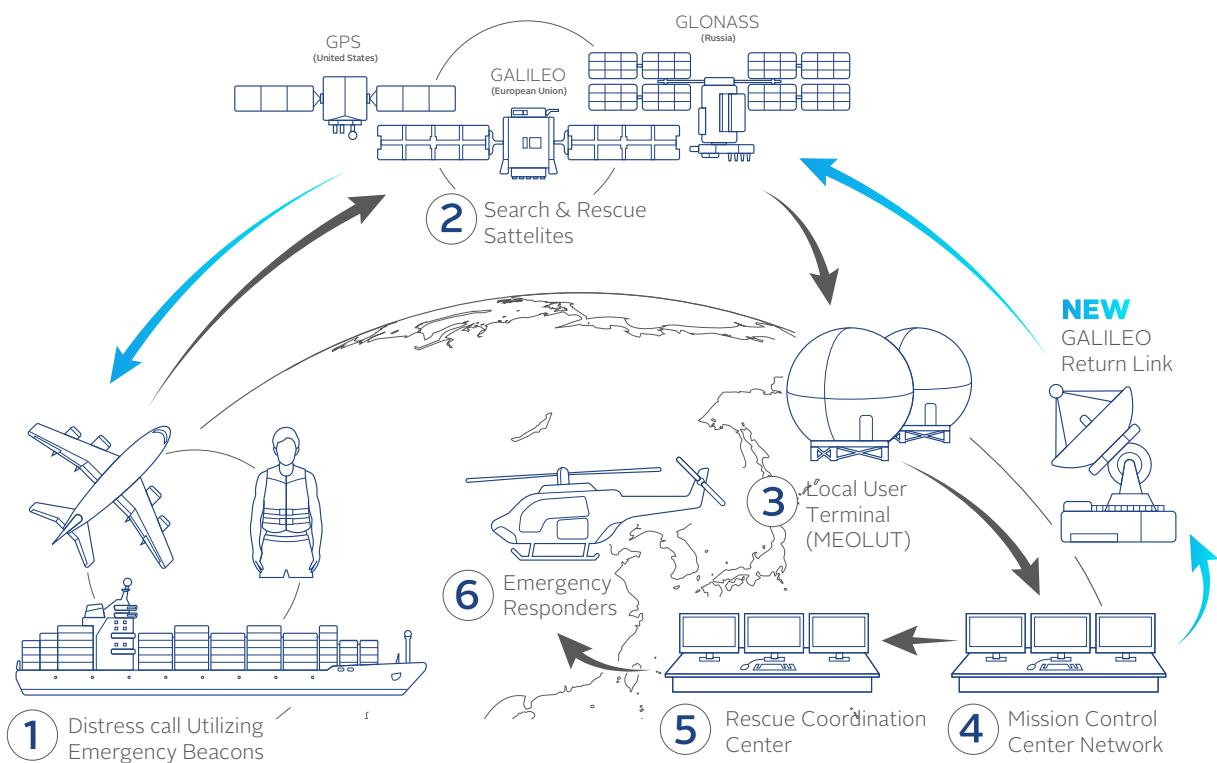


Accelerated Rescue Capabilities with Galileo Powered Beacons

Galileo is the European Union's Global Navigation Satellite System (GNSS) constellation consisting of 26 satellites of a planned 30, with a target of 2020 for completion of the network.

The new system reached its operational phase in 2017, allowing technology with a Galileo-enabled receiver to use signals provided by Galileo's global satellite constellation for positioning, navigation and timing.

Galileo's development is part of the EU's preparations for upgrading the international distress beacon locating organisation, Cospas-Sarsat's, Search and Rescue (SAR) Ecosystem under the MEOSAR program, which requires new earth based antenna and a network of 72 GNSS satellites, made up of the US GPS, EU Galileo and Russian Glonass constellations.



When fully operationally in 2022, MEOSAR's upgrade of the global SAR ecosystem will have wide ranging impact on the speed, accuracy and reliability of emergency readiness and response beacons. Orolia has been instrumental in this project, developing and installing over 60% of the global ground infrastructure and incorporating Galileo technology in its latest products.

With the 2017 launch of the award winning SmartFind G8 & SafePro EPIRBs and the 2019 release of the upgraded FastFind 220 and Kannad Solo Personal Location Beacons (PLBs), Orolia Maritime offered the world's first search and rescue beacons with accelerated location detection by utilising multiple GNSS sources, including the precision location capabilities of Galileo.



While this technology opens new life saving capabilities, it further increases the level of knowledge the customer requires to determine what beacon is best suited for their needs. Explanations of how Galileo GNSS signals accelerate alert detection, have to compete with descriptions of how the 406MHz Cospas Sarsat satellite-based search and rescue system works and the role of localised frequencies such as 121.5 MHz and AIS.

Thankfully a live rescue demonstration organised by the European Commission called Operation Shark Bait has helped create a clear user case for adopting beacons that access the latest search and rescue capabilities, without having to be fully versed on the technicalities of satellite frequencies.

Operation Shark Bait placed a volunteer in a lifeboat off the Belgium coast with a Galileo enabled FastFind 220 PLB (2019). The subsequent 406MHz signal from the PLB was detected by the search and rescue payloads on Galileo and the data relayed to the Toulouse centre of French space agency CNES, then to the Belgium's Maritime Rescue Coordination Centre, based in Oostende where the location coordinates are shared with the helicopter / boat.

Operation Shark Bait alert detection, location confirmation and notification process took just three minutes 32 seconds, whereas previous to the development of Galileo this process could have required up to 1 to 4 hours to complete.

The education significance of this project has been invaluable, both to understanding the impact of the investment in the MEOSAR program to upgrade Cospas-Sarsat and the joint effect of the new Galileo satellite constellation and the precision of the first generation of Galileo enabled beacons.



Operation Shark Bait Volunteer Tara Foster

Galileo service greatly adds to the 406MHz detecting Cospas-Sarsat network, while its precision location capabilities work alongside GPS to offer greater global coverage, faster more accurate location detection and overcomes previous blind spots and geographical barriers to signal reception.

So, for those who work or play on the water, or in remote areas on land, it's clear that your next distress beacon should include Galileo GNSS, as utilising the latest technology greatly accelerates location detection and with it, the chances of a successful rescue.



**World's First Galileo PLB's the
McMurdo FastFind 220 (2019)
& the Kannad Solo (2019).**