FREQUENTLY ASKED QUESTIONS

FastFind
SEAS OF SOLUTIONS BRAND

Return Link Service Personal Location Beacons

Since March 2021 Seas Of Solutions – owner of the McMurdo, Netwave and Kannad Marine brands, have been supplying its long-awaited upgrade of our highly successful and widely adopted Kannad SOLO and FastFind 220 dual GNSS PLBs. The new FastFind Return Link PLB is the world's first to include Return Link Service (RLS) technology and this document covers frequently asked questions about the new product.

How the Return Link Service (RLS) Works

As part of the MEOSAR program to modernise Cospas Sarsat's search and rescue infrastructure, the European component, the Galileo GNSS satellites, offer new capabilities. Initially providing a new and super accurate GNSS service for positioning in devices with Galileo enabled receivers, as of March 2021 the Galileo's Return Link Service (RLS) was declared globally operational, meaning beacons with RLS capabilities would be able to receive a re-assurance signal back to the beacon in the form of a blue light. This light, typically activated 10 minutes after activation, indicates the distress signal has been received and that the user's location is known by the professional rescue services. RLS allows distress beacons a two-way communication for the first time.

What are the Benefits of Having RLS in Rescue Beacons?

The FastFind Return Link PLB, utilises European Galileo satellite's Return Link Service to send a signal back to the beacon confirming the PLB user's 406 MHz distress alert has been received and their location coordinates are captured. Knowing that others are aware of your situation can greatly improve your mental strength for the challenges you are facing. Return Link's reassurance signal will also reduce the chances of rash decisions taken by those who feel they have nothing to lose, like leaving the life raft or attempting to swim to safety. Knowing that search and rescue professionals know your situation and location will be an invaluable support and makes 406 MHz based beacons two-way communication tools for the first time.

How Does an RLS PLB differ from the existing Seas of Solutions PLBs?

For many crews, one of the major benefits is the familiarity of the technology, with its look and feel remaining largely unchanged from the McMurdo FastFind 220 and Kannad SOLO PLBs. The unit has the same three step activation process, to prevent false alerts and the same basic shape and weight.

What has changed is how it interacts with the user. After activation, the traditional PLB displayed a range of flashing lights to confirm dispatch of the 406 MHz signal and confirmation of GPS lock. This now has the addition of a blue flashing light which activates when a confirmation signal is sent back to the PLB, confirming the call for help has been heard and location is known. It is this two-way interaction of the beacon which reassures PLB users; both that it has activated successfully and the search and rescue community are aware of their situation, hence the FastFind's marketing line to 'Look for the blue'.

The overall effectiveness of the new PLBs, working with the new search and rescue satellites (see MEOSAR below) has greatly accelerated distress detection and location confirmation times. Initially 406 MHz beacon detection was on average 90 minutes, but latest independent testing by the Belgian coastguard during Operation Sharkbait, confirmed location confirmation in less than 10 minutes.

The FastFind Return Link PLB also comes with a newly designed flotation pouch and life jacket attachment clips, to improve the flexibility in both carrying and mounting the product.

If I have an existing beacon with Galileo GNSS, will it now have access to the RLS feature?

The components required to provide RLS are not backward compatible and will require an RLS enabled beacon, such as the new FastFind ReturnLink, to be accessible. The existing Seas Of Solutions range of EPIRBs and PLBs with Galileo still offer incredible accelerated detection capacities but do not have the reassurance signal.

What is the significance of the Blue light feature?

The FastFind Return Link PLB's RLS signal will be confirmed by the activation of a blue light on our new range of beacons. The signal activating the flashing blue light is sent around 10 minutes after confirmation that the distress signal has been detected and the beacon's location is known. The use of a light confirmation ensures the user is aware of the RLS confirmation, even in low light or harsh water conditions and does not require any action from the user – such as removing from its pouch or lifejacket to review which could interfere with the beacons operation and endanger the user. The choice of the colour blue was because of the international association of blue flashing lights and emergency services.

Will the McMurdo FastFind 220 and Kannad Marine SOLO PLBs be discontinued?

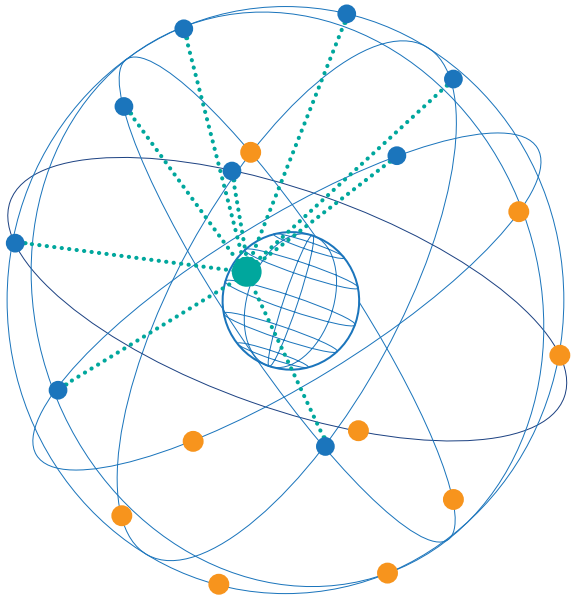
Both the 220 and SOLO had a midlife upgrade to include dual GPS / Galileo receivers in 2019, greatly improving the speed and accuracy of their location detection. There are currently no plans to discontinue this series.

Will RLS PLBs be more expensive?

PLBs with RLS technology will be slightly more expensive than non RLS beacons but continue to be available without subscription charges.

What is Galileo?

Galileo is the European Union's Global Navigation Satellite System (GNSS – often known by the US brand name GPS), allowing technology with a Galileo-enabled receiver to use signals provided by Galileo for positioning. Galileo is part of the EU's upgrading of the international search and rescue coordinating organisation COSPAS SARSAT, under the MEOSAR program. The programme requires new earth-based antenna and a network of 72 satellites, made up of the America's GPS, EU's Galileo and Russian Glonass satellites.



Does Galileo replace GPS?

No, Galileo is the European equivalent of the US GPS system. It adds significant extra global detection for beacons and precision location detection GNSS capabilities working alongside the existing GPS and Russian Glonass constellations.

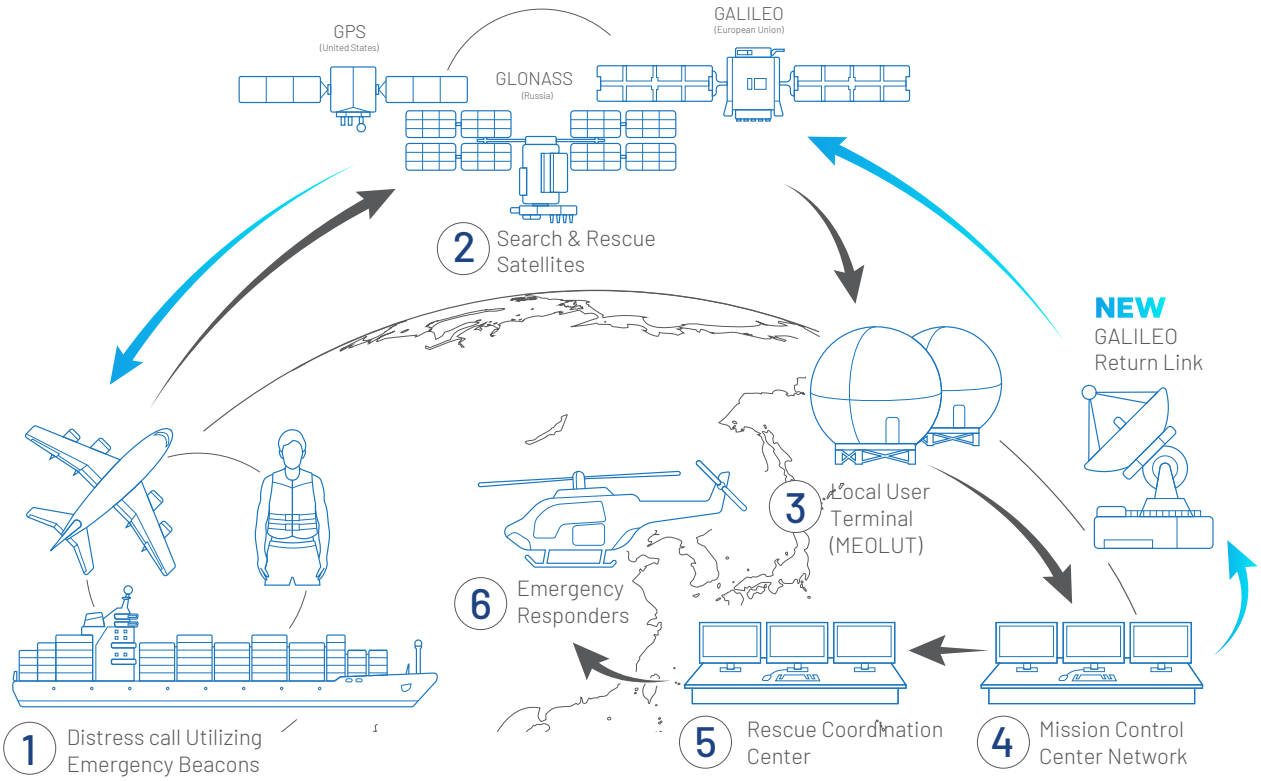
What is MEOSAR?

MEOSAR is the next generation of the Cospas-Sarsat international search and rescue satellite system that has helped to save over 45,000 lives since 1982. MEOSAR will increase the speed and accuracy of distress beacon signal detection and location with new MEOSAR ground antennae and additional MEOSAR satellites. A MEOSAR-compatible beacon can be located with an accuracy of location within 100 meters (328 feet), 95 percent of the time – and within five minutes of distress signal activation, all without reliance on GNSS.

What Impact will Galileo have on search and rescue?

Galileo's immediate impact on search and rescue (SAR) has been the addition of 26 new satellites, allowing greater global coverage, with faster detection of the 406 MHz distress frequency used by distress beacons in EPIRBs and PLBs. Coupled with Galileo's precision GNSS capabilities, distress beacons with Galileo receivers greatly accelerate location detection.

The Second major impact is the Return Link Service (RLS), a re-assurance signal back to a



beacon to inform the user that their distress signal and location have been detected. This new capability is unique to the Galileo satellites and was activated in January 2020 and declared globally operational by Cospas Sarsat in March 2021. The world's first RLS enabled PLB, the FastFind Return Link has been available to buy since March 2021.

Are RLS beacons available to use everywhere?

RLS PLBs (like other beacons) transmit, as part of a distress message, a pre-programmed "country code" that indicates the national residency of the beacon owner and the country where the beacon was purchased. For a temporary period of time the RLS-enabled beacons will be available only with certain pre- programmed national codes, of countries that can support RLS. The latest list of countries allowing RLS beacons is available here cospas-sarsat.int/en/beacon-ownership/rls-enabled-beacon-purchase

Is the PLB's programming procedure the same as for the Fastfind 220 & Kannad SOLO?

Initially Seas of Solutions are only supplying preprogramed FastFind Return Link PLBs.

The process for programming RLS PLBs is like that of the FastFind 220 or Kannad Marine SOLO, however a new OBM software, rather than FPROG3 software, is required and RLS PLBs have their own protocol. RLS PLBs can only support serialised programming, OBM software will allow serialised or MMSI programming once the MMSI protocol has been released by the EU / Cospas Sarsat – which is planned for late 2021 / early 2022.

Why do some countries not allow RLS PLBs?

There are two reasons for restrictions, the first being that despite global Cospas Sarsat approval in March 2021, beacon technology still requires national approval, for example the USA. The second reason is that certain countries have local restrictions, for example Denmark, which only accepts MMSI programmed PLBs, and only on vessels not for land use. Each countries rules can be found on the Cospas Sarsat website - cospas-sarsat.int/en/beacon-ownership/rls-enabled-beacon-purchase

Who Manages the Return Link Service (RLS)?

The Galileo Return Link Service Provider (RLSP) is based at CNES headquarters in Toulouse, where the Cospas-Sarsat French Mission Control Centre (FMCC) is also operated. This facility oversees the management of the Return Link Messages and their coordination with the Cospas Sarsat network and with the Galileo Ground Mission Segment (GMS) on the transmission of messages to the distress beacons through the Galileo E1 signal.

Will RLS feature only be available in PLBs?

The RLS will also be released later in 2022 as an EPIRB with an updated version of Seas of Solutions unique SmartFind & SafePro AIS EPIRB range.

Where Can I learn More?

The Seas Of Solutions website has datasheets and videos on the technology discussed in this document. www.seasofsolutions.com/solutions/galileo-returnlink-rescue/