

**EPIRB:**

EPIRB stands for “Emergency Position Indicating Radio Beacon”. It is a distress beacon used in the maritime sector and is mandatory on merchant ships. It is part of the LSA (Life Saving Appliances) code obligations. It is a component of the GMDSS (Global Maritime Distress and Safety System). What makes it different from other beacons is that when it is activated, it sends a distress message to a satellite which contacts the emergency services on land. Its primary advantage lies in its UNLIMITED range. Therefore, you can be rescued anywhere in the world. If you are planning to venture into areas with little traffic, this is one of the most effective devices to ensure your survival if required to abandon ship.

**PLB (Personal Locator Beacon):** A personal locator beacon, or PLB for short, is a personal electronic transmission device designed to alert potential rescuers to a potentially life-threatening situation in the air, on the water or in remote areas. When activated, the PLB sends a signal on 406 MHz or on another system (121.5 MHz, VHF DSC and/or AIS). It works on the same principle as an EPIRB but has less autonomy.

**RLS (Return Link Service):**

As part of the Cospas-Sarsat system, Galileo satellites are able to pick up emergency signals emitted on 406 MHz by distress beacons and emit a signal to the PLB / EPIRB via the EI frequency to confirm reception of the distress signal (Return Link Message Type 1). Then the rescue centre (Toulouse in France) can send a second message informing the beacon that rescue is underway (Return Link Message Type 2)

**COSPAS-SARSAT - MEOSAR:**

The Cospas-Sarsat system is a global system for alerting and locating emergency position indicating radio beacons (EPIRBs activated on a ship, or PLBs activated by individuals). The international Cospas-Sarsat programme, an intergovernmental cooperation of 43 countries and agencies, maintains a network of satellites and ground facilities to receive distress signals from 406 MHz beacons and route alerts to the appropriate authorities in more than 200 countries and territories. 406 MHz is the radio frequency band in which the beacons emit and is the band monitored around the Earth by Cospas-Sarsat. The MEOSAR (Medium Earth Orbits Search And Rescue) system groups together satellites whose function is to manage alerts.

**AIS:**

By AIS emergency message (frequency 162MHz), all vessels with an AIS receiver on board, within a radius of up to 15 nautical miles and more around the victim, including the mother ship, are informed of the distress situation by an “AIS-MOB” message. This alert message is updated every minute and contains the current GPS position, as well as the course over ground (COG) and speed over ground (SOG) of the drifting victim. This information allows each team to assist in the rescue.

**DSC:**

By DSC (Digital Selective Calling), an alert message (frequency 152MHz) is sent to the craft whose MMSI has been programmed on the beacon (closed loop alert) or to all VHF-DSCs (open loop alert).

**Homing:**

A signal called the “homing signal” is emitted via 121.5 MHz. With the respective reception and position equipment, the right direction to the victim can be found within a distance of 3 nautical miles. In the situation where the victim cannot be “seen” this technology has a great advantage. The closer the vessel is to the victim, the more accurate the location for rescue.

**MMSI:**

If required for the radio equipment on board (VHF or SSB DSC, Cospas Sarsat beacon, AIS transponder, etc.), a 9-digit numerical code called MMSI (Maritime Mobile Service Identity) will be allocated by the Agence Nationale des Fréquences (ANFR), it must be coded on all the equipment concerned. The MMSI is associated with a unique registration and allows for a secure identification of the vessel and its owner. The nominative data associated with the MMSI make it possible to collect all useful information contributing to the responsiveness of the rescue services in providing assistance, especially to persons in distress. The MMSI assigned to a vessel cannot be reused on another vessel.