

Emergency beacons are essential and in some cases part of the mandatory safety equipment to be kept on board. They allow to alert the emergency services when you are in distress, so that assistance can be provided as quickly as possible.

There are two main categories of beacons: **deck EPIRBs** (Emergency Position Indicating Radio Beacon) which are fitted to ships and **personal beacons**.

1- DECK BEACONS / EPIRB

A deck beacon is an **EPIRB**. This beacon, which is sometimes mandatory, is used to alert the rescue services in the event of a shipwreck. The beacon is associated with the boat's **MMSI** number, so that the rescue team knows what to look for. EPIRBs must be registered with the ANFR (National frequency agency): <https://www.anfr.fr/fr/licences-et-autorisations/radiomaritime/licence-mmsi>.

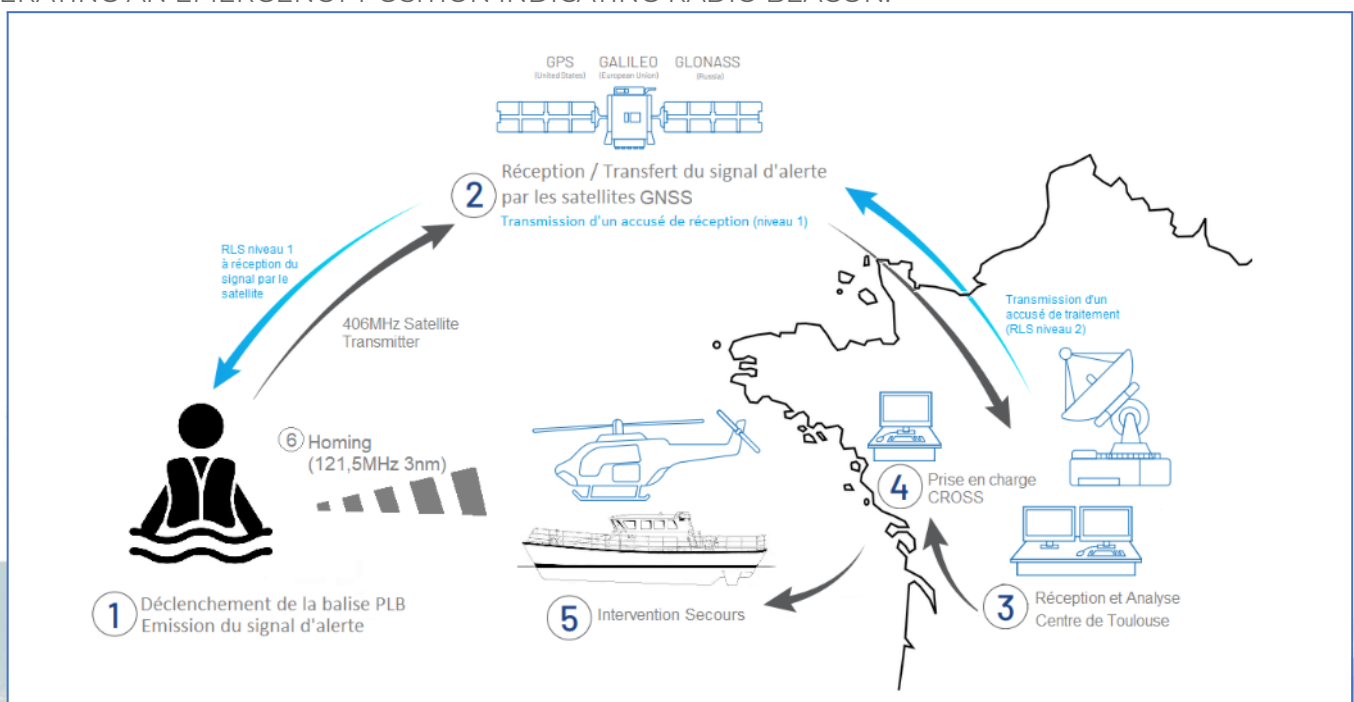
The beacon may be placed in a self-releasing container, i.e. the beacon will be released when the container is submerged, or in a manual release holder, i.e. a person has to manually release and activate the beacon.

Once in contact with water, the **EPIRB** emits 406 MHz waves on the international Cospas Sarsat satellite network, which will dispatch the nearest emergency services to the site. It also emits a 121.5 MHz **HOMING** signal to help nearby rescue services find you.

SELECTION CRITERIA

- Release system: automatic or manual.
- System with GPS or without GPS: GPS allows faster and more accurate location.
- Autonomy: Time during which the beacon will emit after activation.
- Battery life.
- AIS technology: some EPIRBs also have a built-in AIS, which makes it easier to be located by the emergency services, but also by a nearby boat equipped with an AIS receiver.
- Size of the beacon: a more compact beacon will take up less space.

OPERATING AN EMERGENCY POSITION INDICATING RADIO BEACON:



2- PERSONAL BEACONS

Personal beacons, as the name suggests, are beacons designed to be carried by the people on board. There are two types of personal beacons: PLBs and AIS beacons.

2-1 PLBs

A PLB is generally small and compact-size. It is designed to be attached to the lifejacket or to be stored in a pocket. It is easy to access and can be activated either automatically in case of immersion or manually by pressing the button provided. This beacon is used to alert the emergency services in case of a problem.

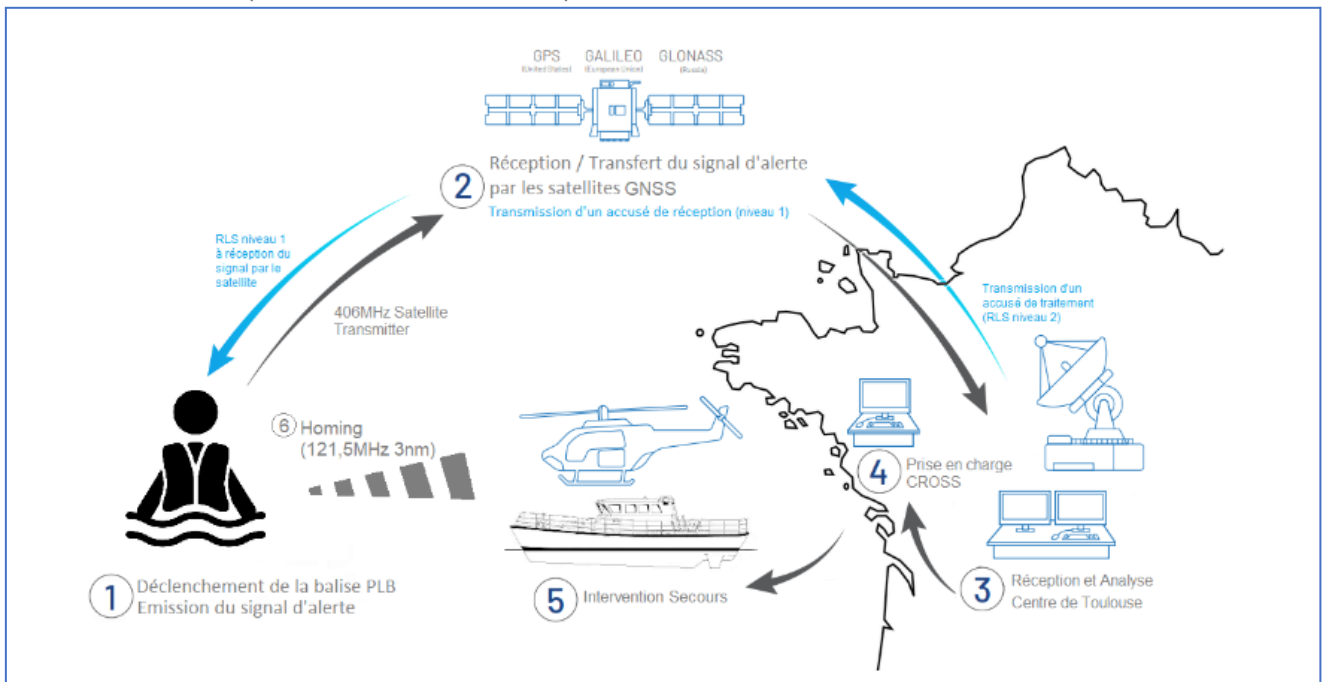
It is recommended to update the information of the beacon holder each time there is a change, directly on the CNES (National centre for space studies) website: <https://registre406.cnes.fr/sarsatweb/do/login>. PLBs can also be particularly suitable if you often sail on different boats.

Once activated, the PLB emits 406 MHz waves on the international Cospas Sarsat satellite network, which will dispatch the nearest emergency services to the site. It also emits a 121.5 MHz homing signal to help nearby rescue services find you.

SELECTION CRITERIA

- System with or without GPS: allows faster and more accurate location.
- Autonomy: time during which the beacon will emit after activation.
- Battery life.
- Tightness and buoyancy: PLBs are not designed to be continuously immersed. However, they can withstand being underwater for a short time, at varying depths. Some of the beacons float, to prevent them from accidentally sinking.
- Size of the beacon: a more compact beacon will take up less space, and will fit more easily into your pocket or lifejacket.

OPERATING A PLB (SIMILAR TO THE EPIRB)



2-2 AIS BEACONS

An AIS beacon is generally small and compact-size. It is designed to be attached to the lifejacket or to be stored in a pocket. It is easy to access and can be activated either automatically in case of immersion, at the same time as the lifejacket is inflated, or manually by pressing the button provided. There are two types of AIS beacons: AIS-MOB, AIS-DSC and SART beacons.

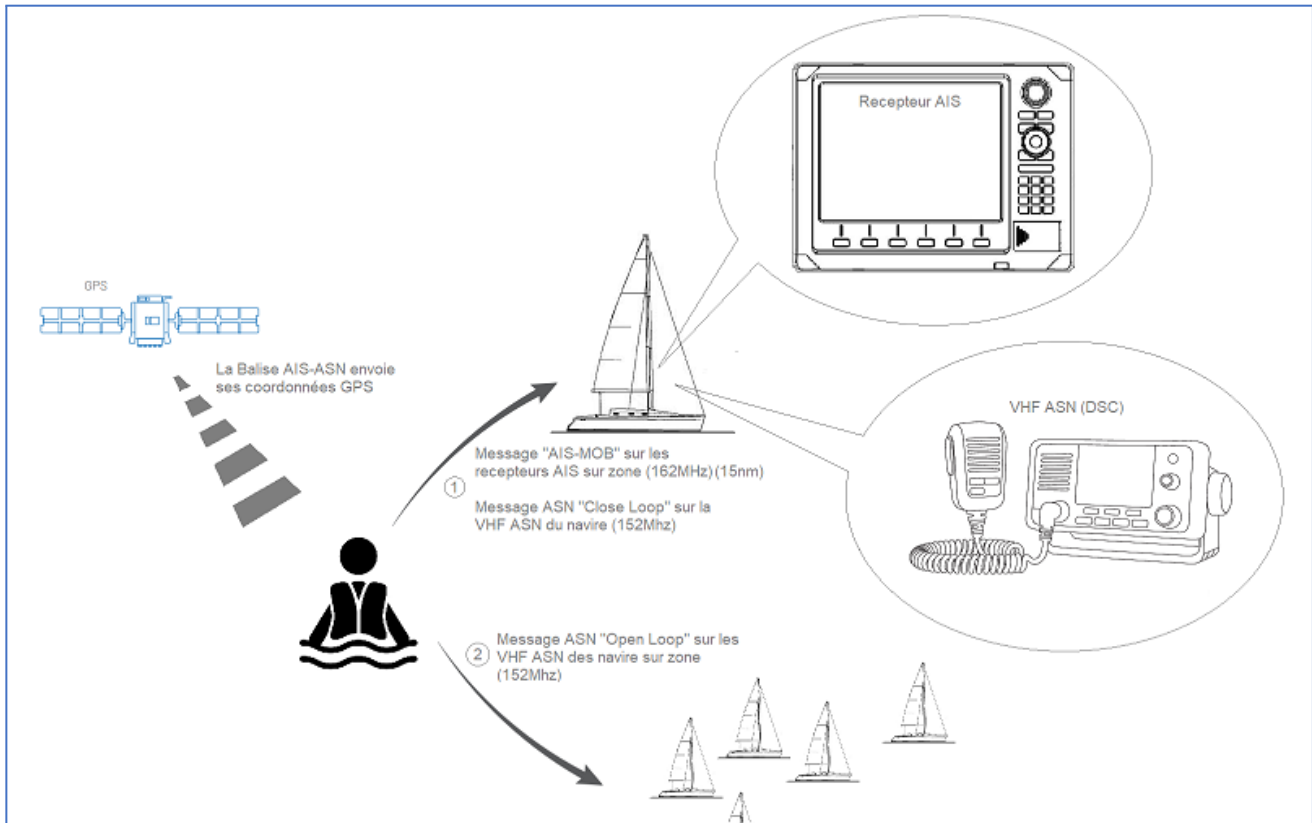
2-2-1 The AIS-MOB and AIS-DSC beacons are specifically designed for the man overboard situation. They are usually designed to be attached directly to the lifejacket and to be activated by the inflation of the lifejacket. Once activated, the beacon emits an AIS signal which is received and read by all surrounding receivers, including the receiver on the boat from which the person fell. The AIS signal allows the position of the person overboard to be tracked in real time, so that help can be provided as quickly as possible.

The AIS-DSC beacon also emits a signal to all VHF-DSCs in the area, substantially improving the rescue system.

CRITERIA FOR SELECTING AIS beacons

- Activation system: automatic or manual.
- Autonomy: time during which the beacon will emit after activation. Longer autonomy allows more time for rescue services to find you.
- Battery life: A beacon with a longer battery life or a replaceable battery features greater advantages.
- Range: a longer range increases the area in which the AIS signal will be emitted, and therefore increases the chances of the signal being received quickly.
- Size of the beacon: a more compact beacon will take up less space, and will fit more easily into your pocket or lifejacket.

OPERATING AN AIS-DSC BEACON



2-2-2 SART beacons are specifically designed for use in a liferaft. The beacon is activated manually by one of the persons in distress. It then goes into standby mode, i.e. it is switched on, but does not emit. When a ship equipped with radar is close enough, the beacon receives the signal and sends it back to report its position. The AIS signal allows the position of the liferaft to be tracked in real time, so that help can be provided as quickly as possible. A SART beacon is mandatory on 300 to 500-tonne boats. For boats over 500 tons, at least 2 SART beacons are required. 1 beacon for every 4 liferafts is mandatory on passenger ships.

SELECTION CRITERIA

- Autonomy: Time during which the beacon will emit after activation.
- Battery life.
- Range: a longer range increases the area in which the AIS signal will be emitted, and therefore increases the chances of the signal being received quickly.
- Size of the beacon: a more compact beacon will take up less space, and will fit more easily into your grab bag or in a pocket.