The Inmarsat System

Inmarsat provides the space segment necessary for instant and reliable distress and safety accessed by users on board vessels fitted with either Inmarsat –A, B and C terminals. These terminals can be used to satisfy most of the medium and long-range communications functions specified in the GMDSS.
Inmarsat Concept

Inmarsat Satellite

Inmarsat A, B, and C

Inmarsat A, B, and C

Inmarsat-E EPIRB

Rescue Co-ordination Centre (RCC)

Land Earth Station

National and International Networks

Inmarsat Database
Ships fitted with Ship Earth Stations (SES) can also be utilized for originating and receiving communications with other ships involved in distress cases. When multiple ships are involved, the Enhanced Group Call (EGC) system can be advantageous for operational updates and planning actions from RCCs. These ships can also be directly contacted by RCCs via telephony or telex. An RCC may also be equipped with an Inmarsat terminal (SES) for SAR communications.
Inmarsat Enhanced Group Calling System (EGC)
Inmarsat also provides capability for an L-band satellite EPIRB service called Inmarsat-E. This satellite EPIRB will float free from a sinking ship and automatically transmit the distress alert including the position of the incident.
Figure 5a - Basic concept of the L-band satellite EPIRB system
The COSPAS-SARSAT System

A satellite distress alerting system based on low altitude near polar orbiting satellites designed to locate distress beacons (EPIRBs).
The COSPAS-SARSAT EPIRBs transmit signals that are received by their satellites. These signals are then relayed to ground receiving stations called **Local User Terminals (LUTs)**, which process the signals to determine the location of the EPIRB. Each LUT is, in turn, linked to a Mission Control Center (MCC) and alert messages are forwarded to the appropriate RCC for action.