



# ISSB-400 Integrated Sonar System for Submarines



## DESCRIPTION

The ISSB-400 is an advanced and integrated sonar system for submarines. The ISSB-400 consists of common modular hardware and software elements. The configuration depends on the size and mission of the submarine. Due to its open architecture and modularity ISSB-400 matches almost all applications and requirements. The ISSB-400 fits for new submarine as well as for refit projects.



## SYSTEM OVERVIEW

The ISSB-400 is equipped with different sonar facilities for panoramic detection, analysis, and classification of submarines, surface vessels and torpedoes.

## SONAR SUBSYSTEMS

Main requirements for the designing of ISSB-400 sonar subsystems to enable the submarine to fulfil different tasks are:

- High detection performance in various frequency bands for all types of targets.
- High performance tracking accuracy
- High performance target discrimination and bearing accuracy
- Classification support
- Under-water communication
- The ISSB-400 can be fitted with different sonar subsystem. The configuration depends on the size and mission of the submarine. The following sonar sensors are available

## INTERCEPT SONAR

Intercept sonars are early warning systems. Also they aid to classify targets by processing the transmitted signals of other platforms.

## ACTIVE RANGING SONAR

Active sonars emit pulses of sound waves and process the received echo from target to estimate the range, bearing and Doppler of the target.



## BOW ARRAY PASSIVE SONAR

Passive sonar involves processing the sound signal generated by the target for estimating the bearing and target characteristics through spectrum analysis. The information gathered by the sonar is fed to the Fire Control System to compute other target parameters like speed, course and range.

## OBSTACLE AND MINE AVOIDANCE SONAR

Obstacle and Mine Avoidance Sonar are high frequency active sonar to aid safe surfacing operations and protection against mines.

## COMMUNICATION SONAR

Underwater communication sonar systems are used for communication between platforms through acoustic means in different modes; including voice, telegraph and data.

## SYSTEM ARCHITECTURE

For the design of the ISSB-400, it was a top priority to create open system architecture. The open system architecture in combination with the modularity allows for future growth potential. Also it creates a high degree of flexibility to incorporate new technologies and system updates on economic terms.

## THE UPGRADE SOLUTION FOR EXISTING SUBMARINES

Our technical solution is based on reuse of the sonar wet parts, but introducing an open architecture and modular sonar processing suite covering the whole chain from conditioning, analogue to digital conversion, sonar processing and presentation of the results on new multi-function console.

## SPECIAL SONAR SENSORS

- Emergency sonar
- Noise monitoring sensors



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