SONAR
Simulator System

The system realistically simulates Sonars based on surface platforms, subsurface platforms, and air platforms in all marine environments, according to their types and configurations.
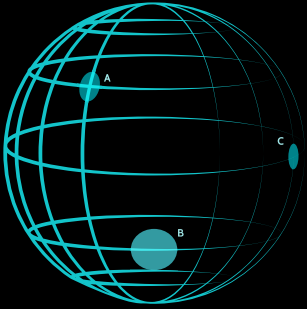
Our system offers the capability to simulate all kinds of signals.

It has the ability to provide both video displays and audio simulations in active and passive modes, accompanied by a realistic underwater environment depiction.

The Sonar simulator system provides the ability to design and select specific sonars. It allows adjustments based on the type of sonar and the platform on which it is installed.

The system can be used for analysis, training, and exercise development.

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Simulator Features and Advantages

- Multi-platform sonar simulation for realistic scenario training
- Underwater weapon firing simulation
- Anti-submarine warfare training support
- Multi-platform simulation
- Realistic scenarios and submarine defense warfare simulation
- Training and scenario development capabilities
- Feedback to students via debriefing/replay

Technical Specifications

- Compliant with HLA and DIS standards
- Supports a wide range of sonar types, including hull-mounted, dipping, and towed array sonars
- Includes realistic video display and audio simulation for enhanced training realism
- High compatibility and scalable system
- Strong hardware and software support
- High-resolution video and audio simulation

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Modeling Capabilities

Acoustic environment modeling is one of the most critical aspects of the Sonar Simulator. It involves numerous factors that affect sonar operations, such as noise from all sources, water depth, echoing, bottom configuration, acoustic spectrum properties, various sound propagation paths, daily and seasonal variations, distant noise, and various man-made and natural noise sources.

Target Simulation

The system allows the adjustment of realistic target parameters, including pre-set or default values for target strength and appearance, acoustic signature and speed, depth, shape, active transmission, changes due to speed variations, machine operation, etc., by the designer and trainer.

The system has the capability to add single/multiple platforms to training scenarios. During simulation operation, platform parameters can be modified.

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Acoustic Modelling and Sonar Simulation Components

Acoustic Propagation and Noise Model

Acoustic Decoy Model

Acoustic Jammer Model

Sonobuoy Model

Surface Ship Sonar Model

Submarine Sonar Model

Aerial Platform Sonar Modelling

Sonar Audio Generation Model

T: 0 (850) 840 00 46
F: 0 (312) 210 00 47
www.simsoft.com.tr
info@simsoft.com.tr

CENTER

METU Technopolis

SATGEB Region. Common Building 1st Floor

AR-GE Office ANKARA

ABD FLORIDA

Simsoft Technologies 4250

Alafaya Trail

Ste 212-148 USA