CIRRUS MHSS

MINE HUNTING SIMULATION SYSTEM

Modern mine hunting sonars are complex sensor systems requiring a well trained crew to achieve performance goals.

The Mine Hunting Simulation System has been developed for the RAN to cost effectively meet this training challenge.

Cirrus Real Time Processing Systems

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benefits

- train up to 10 students simultaneously
- emulation of sonar consoles supports basic equipment familiarisation
- high fidelity simulation of sonar imaging promotes advanced sonar skills training
- command team & SOP training enabled by full emulation of tactical data management system and its interaction with sonar
- powerful instructor software maximises knowledge transfer
- cost effective design based on COTS hardware
- as used by RAN

overview

The MHSS has been developed in close cooperation with the RAN to provide cost effective simulation training in mine hunting.

Simulated mine hunting on the MHSS closely matches the at-sea experience.

Students control consoles that mimic the appearance and function of at-sea sonar & data management systems, allowing trainees to be drilled in individual and team SOP's.

A high performance sonar image emulation engine drives the simulation.

Characteristics of the sea bed, the contacts, the environment, the sensor and operator controls are all realistically simulated, maximising trainee understanding of mine-hunting acoustics.

The MHSS makes it easy for the instructor to monitor trainees' progress, emphasise key learning points, and to manage trainee records.

Computer based training modules are incorporated to reinforce the learning gained via simulation training.

The MHSS is the answer to the challenge of mine hunting training.

The RAN Mine Warfare Faculty has been continuously involved in the development of the MHSS, ensuring that the MHSS is an instructor-friendly training tool that makes it easy to transfer mine hunting expertise.

features

Training Network

- 10 x student consoles, instructor console & projection system

Consoles

- cost effective COTS based hardware
- emulation of ship-fit display, ELP, keyboard, trackball & control-grip user interface devices

Training Modes

- 10x1 mode, for individual sonar skills and SOP training
- 3x3 mode, for command team training
- CBT mode, for off-line augmentation of trainees' mine-hunting knowledge

Sonar Image Emulation

- independent image emulation at each console
- background accounts for sea bed depth, slope, ridging, bottom type and ray glance angle
- imaging of contacts accounts for shape, dimension, orientation, reflectivity and aspect
- contact shadows rendered as per geometry
- effect of environmental factors including sea state, SVP incorporated in image
- sensor parameters, including aperture, band, tilt angle and towed body depth accounted for
- emulation of post processing: colour control, CAD and CAC

Tactical Data Management

- emulates ship-fit management of tactical data produced by sonar
- functionality supports "Target Indication" for coordination of sonars

Packaged Scenarios

- 3 levels of difficulty to progressively introduce trainees to mine hunting challenges

Instructor Control

- monitor trainee mine-hunting performance
- control own ship to circle contacts of interest
- vary features of contact environment or sensor
- automatic management of student records