



Coast Watch

Coast Guard C²System



Coast Watch provides protection of territorial waters from penetration by terrorists, smugglers and illegal traffic.

Objectives

- Coastal Surveillance.
- Search and Rescue Global Maritime Distress and Safety System (GMDSS) compliant.
- Vessel Traffic Management.

Main Features

- **Coast Watch** generates comprehensive and high quality Maritime Situation Picture (MSP) together with a variety of Decision Support Tools.
- MSP serves as the main source of information for the decision-making. The quality of these decisions (in the areas of threat evaluation, planning and missions management) depends directly upon the quality of the MSP.
- High Availability of Coast Watch is achieved due to:
 - Hot backup of critical components.
 - Centralized System Architecture.

System Structure

- Suite of Sensors and External Systems providing detection and Identification
- Command and Control Centers
- Communication infrastructure for data transfer and remote control of the sensors

Sensors & External Systems

For MSP generation the following information could be used in **Coast Watch**:

- ▶ Short-Range Radar (SRR)
- ▶ Coastal Radar (CR)
- ▶ Electro Optical (EO) / Infra Red (IR) equipment system capable of effective detection and identification of vessels
- ▶ Automatic Identification System (AIS) for identification of vessels fitted with an AIS transponder
- ▶ Radio Direction Finder (RDF) system for identification and location of vessels communicating via radio communication equipment (HF, VHF or UHF)
- ▶ Electronic Finger Printing (EFP) system measuring electronic emission from vessels. EFP allows identifying emitter and emitter mode of operation and subsequently identifying the emitter-bearing platform.

The sensors can be remotely controlled.



C² Hierarchy Support Centers

- Local Control Stations.
- Regional Command & Control Centers.
- National Command HQ.
- Unified MSP at all levels.

Main Functions

MSP Generator (MSPG)

Tracking

Based on multi-hypothesis ambiguity resolution and hybrid multi-model/variable state dimension update techniques. Utilizes various Tracking Performance Parameter (TPP) sets to achieve required adaptivity to changing (in time and space) environment.

Automatic Identification of MSP

by integration of EFP, AIS and RDF data. MSP identification is further enhanced by incorporation of EO/IR facilities at each operational site.

Sensor Bias Compensation (Registration)

Continuously monitors the sensors performance in order to determine and Compensate for the biases.

Tracking On-Line Analyzer (TOLA)

Monitors the tracking and sensors performances to facilitate the optimal utilization of the TPP sets.

Sensor Management

Designed to perform two very important tasks: adaptation of sensors performance to changes in operational environment (meteorological conditions as well as operational goals) and identification support.

Decision Support

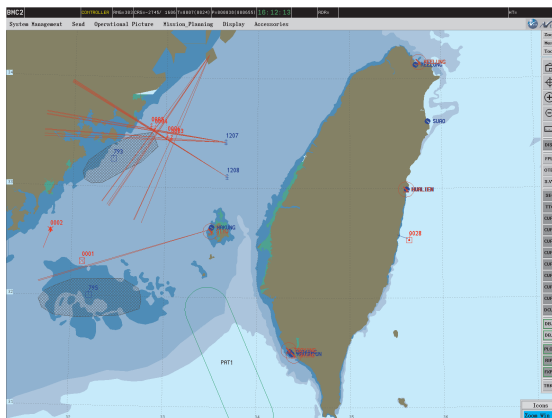
The Decision Support Tools assist commanders in planning the various missions, and C² system operators in carrying out the planned missions. **Coast Watch** interacts with different external systems, providing integrated operational environment.

Decision support functions include:

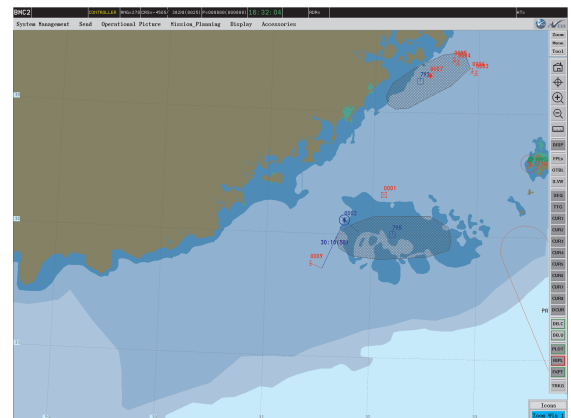
- Displays and Alerts
- Threat Evaluation
- Threat prioritization.
- Patrol Ship Interceptor allocation.
- Control Intercept (GCI) support.
- Identification of vessel in distress.
- Maritime Search and Rescue support.
- Own force deployment and readiness.
- Mission orders/plans dissemination.

Recording and Replay

- Debriefing.
- Training.



The picture illustrates the generation of electronically identified MSP



The picture illustrates command and control features of Coast Watch

Proven Experience

Ness TSG is a leading global command-and-control, intelligence and telecommunications systems House. With over three decades of experience, Ness TSG specializes in the development and integration of advanced, comprehensive solutions for the defense, homeland security, telecom, and utilities sectors. Dedicated to delivering cutting-edge, best-of-class solutions, Ness TSG serves a diverse client base of private, public and governmental organizations worldwide. Leveraging its affiliation with Ness Technologies (NASDAQ: NSTC), a global IT solutions provider with offices in 15 countries and 7,000 employees, Ness TSG offers a one-stop-shop of products, systems and professional services for a range of military, paramilitary and telecom applications. For more information about Ness TSG, visit [Http://www.ness.com](http://www.ness.com).

NESS Technologies & Systems Group (TSG)
P.O.B 58180 Tel-Aviv 61581 ISRAEL
Tel: 972-3-5483518, Fax: 972-3-5483700,
e-mail: TSG@ness.com,
Web: <http://www.ness.com>