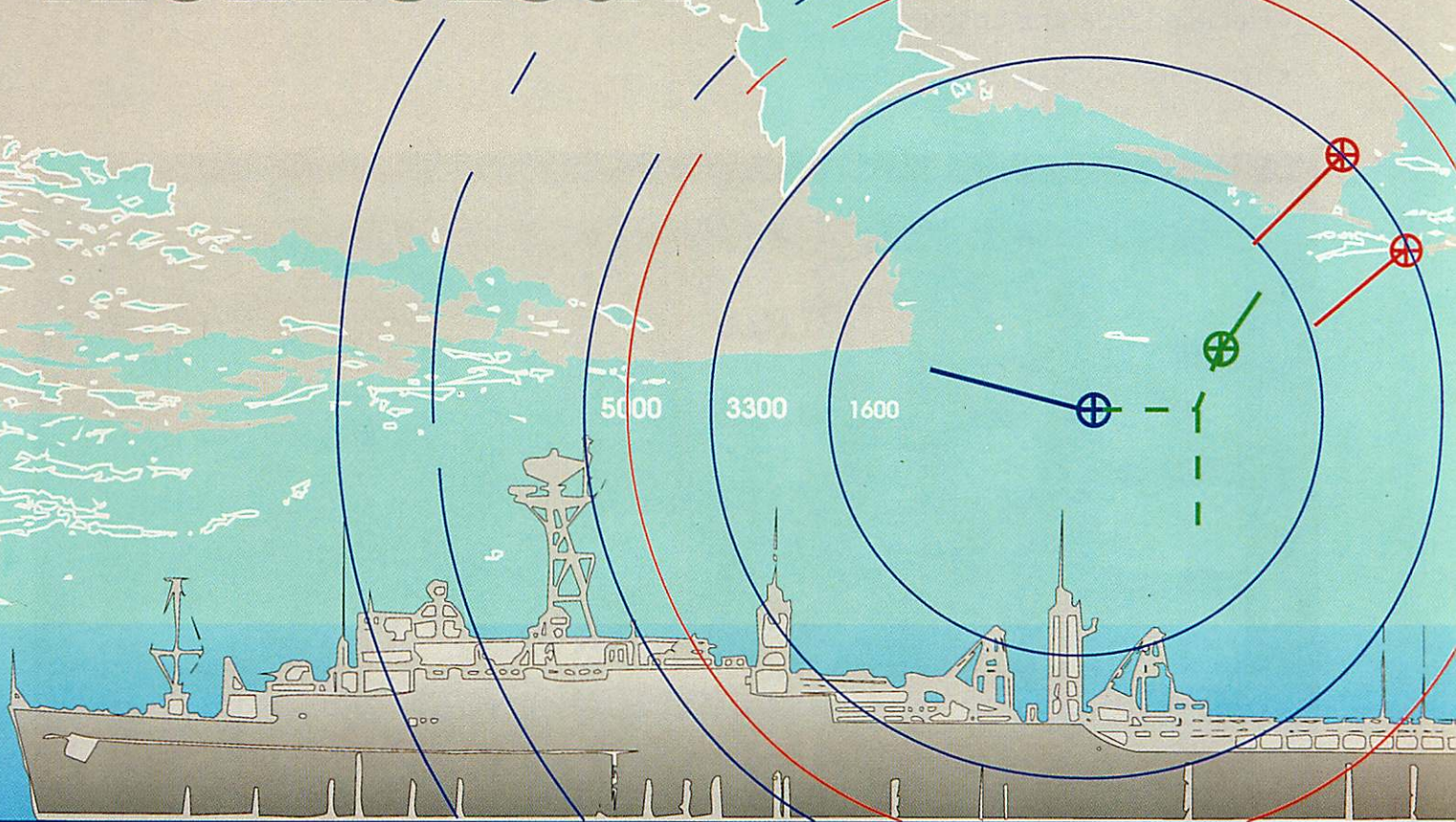


# AUTOMATED REAL-TIME PLANNING AND CONTROL TECHNOLOGY



THREAT  
III →

MULTI-  
SENSOR  
DETECTION

DATA  
FUSION

SITUATION  
ASSESSMENT

TACTICAL  
PLANNING AND  
SCHEDULING

TACTICAL  
ACTION  
ORDERS

EXECUTION  
AND  
MONITORING

PLATFORM





# CURRENT AUTOMATED PLANNING PROGRAMS

## SEAPACS - Submarine Engagement Automated Planning and Control System

*Multi-Purpose Planning Technology*

### SPONSOR

- Advanced Research Projects Agency

### OBJECTIVE

- Development of Tactical Planning Decision Aid Technology

### PAYOFF

- Reduced Response/Reaction Times
- Assured Tactical Control
- Reduced Operator Loading
- Increased Combat Effectiveness

## SEAPACS APPLICATIONS

### SPONSOR

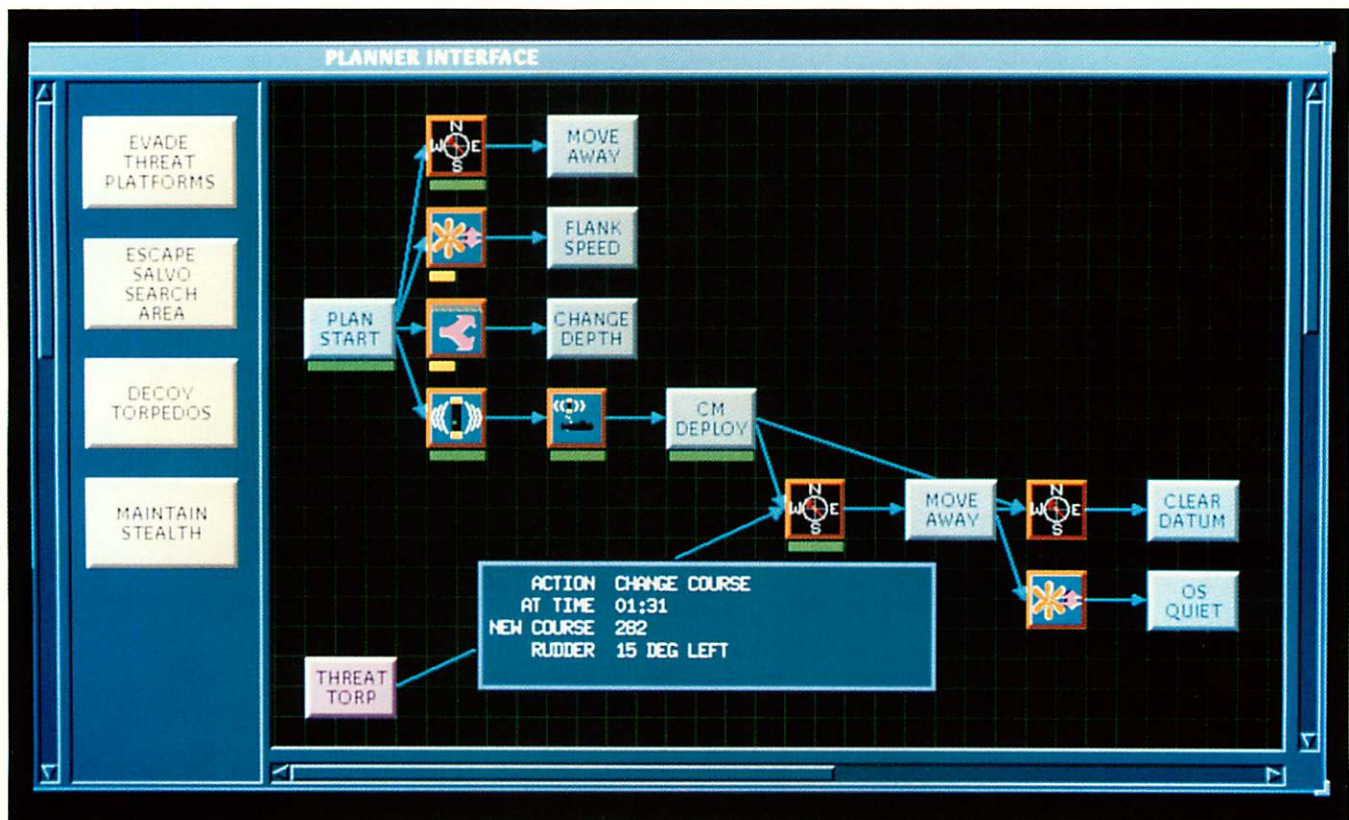
NAVSEA and Naval Underwater Warfare Center, Newport

### OBJECTIVES

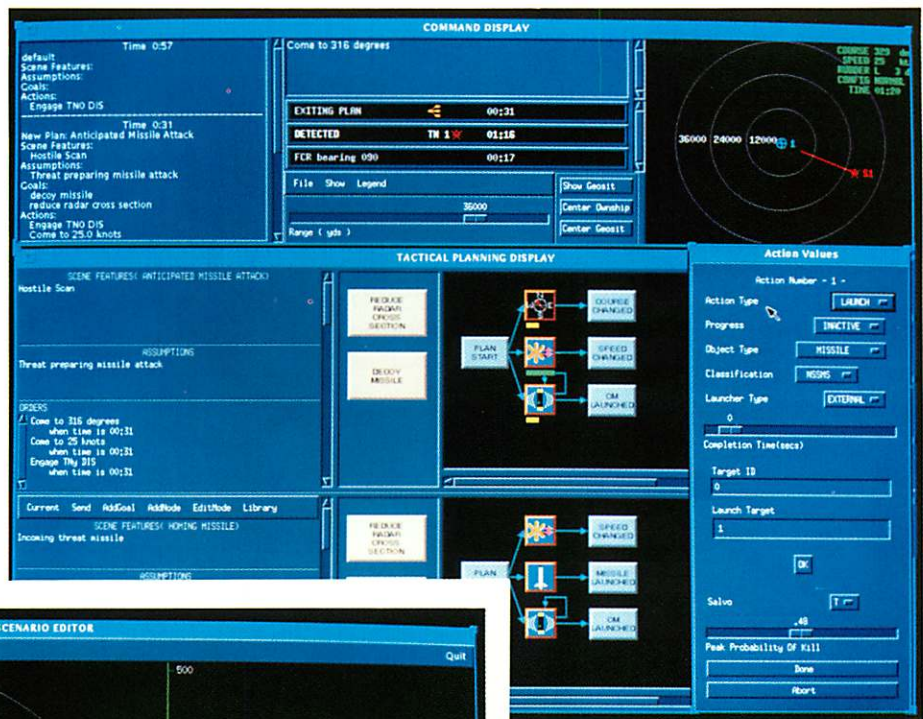
- On-Board Training Control
- Embedded Tactical Decision Aid

### PAYOFF

- Increased Realism
- Increased Readiness
- Reduced Training Costs

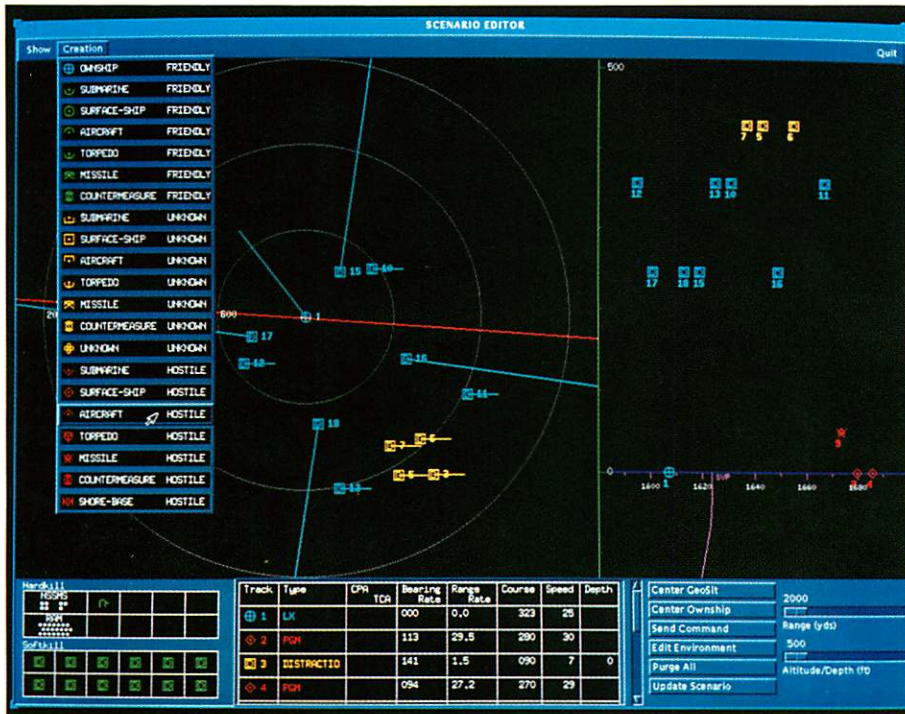


SEAPACS Planner Interface Display



ASDCS Command Display

Scenario Editor Display



## ASDCS - Advanced Ship Defense Combat System

### Surface Multi-Warfare Planning and Control

#### SPONSOR

- Naval Surface Warfare Center, Dahlgren
- Office of Naval Research

#### FEATURES

- Sensor, Weapon, and Countermeasure Optimization
- Surveillance Planning

- Proactive and Reactive Defense Recommendations

#### BENEFITS

- Enhanced Survivability
- Improved Asset Utilization
- Integration of Operations and Comprehensive Defensive Planning



# PLANNING AND CONTROL TECHNOLOGY

## INTEGRATED SYSTEMS APPROACH

- Knowledge Engineering Tools
- Advanced Planning Engine
- User-friendly Graphical Interfaces
- Modular, Portable, Open Architecture

## PLANNING TECHNOLOGY FEATURES

- Generic Hybrid Planning Technology
- High-Level Knowledge Representation Language
- External Knowledge Bases
- Interfaces for External Systems
- Automatic Scene Evaluation and Planning Activation
- Continuous Plan Monitoring and Execution Control
- Multimode Operation - Automatic/Interactive
- Interactive Queries and Explanations

## USES

### Training

- On-board ship
- On-shore
- Against Intelligent Adversaries
- With Expert Decision Aids

### Combat Decision Support

- Real-Time Tactical Advice
- Automatic Order Generation and Execution
- AUV/UUV Command and Control

### Analysis and Development

- Force Level System
- New Combat Systems Concepts
- System Requirements and Specification
- Tactics and Doctrine
- Decision Aids
- Algorithms and Models

*For Additional Information Contact:*

Advanced Systems  
Loral Librascope Corporation  
833 Sonora Avenue  
Glendale, California 91201  
Attn: Larry Anderson  
(818) 502-7598

Business Development  
Loral Librascope Corporation  
1725 Jefferson Davis Highway  
Arlington, Virginia 22202  
Attn: Edward Kirsch  
(703) 416-5532

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