

## COOPERATIVE ANTISUBMARINE WARFARE

### MISSION IN BRIEF

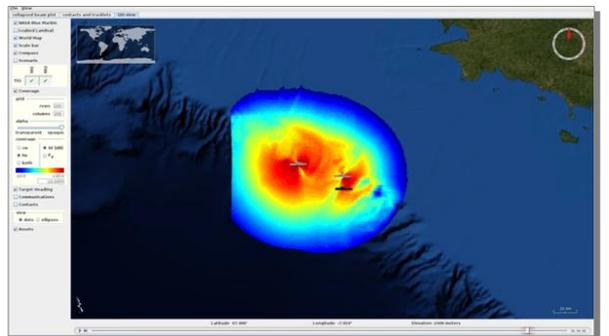
Transform NATO's antisubmarine warfare (ASW) strategy from a reliance on using large ships to detect submarines to using distributed networks of mobile and fixed sensors that communicate with each other.

### OVERVIEW

Since its inception in 1959, CMRE has been a world-class centre for sonar research, particularly multistatic sonar. Although sonar research is still a major thrust at the Centre, the military strategies for ASW are changing. During the Cold War, ASW was primarily a game of cat and mouse where a ship tried to find and track the enemy's submarine. Today, the emphasis is on using networks of sensors to conduct surveillance. These sensors are both fixed (buoys) and mobile (AUVs). Relative to a traditional ship-based ASW operation, a sensor network is inexpensive, stealthy, and removes personnel from harm's way.

The Cooperative ASW programme consists of three main projects:

- **System Concepts for Littoral Undersea Surveillance.** Researchers are investigating the ability of AUVs to tow sonar arrays in coastal waters, process information using onboard computers, and operate autonomously, adjusting their behaviours based on the environment.
- **Communications and Networks.** Cooperative ASW is dependent on underwater communication, a challenge that is made more complex by the requirement of interoperability so that NATO navies can set up modular and scalable systems.
- **Decision Support.** Software tools are being developed to help NATO navy personnel train for, plan, and execute operations. These tools merge environmental data and provide predictions as well as levels of uncertainties.



Top: AUVs outfitted with sonar, onboard processing and communication systems. Bottom: Screenshot of Multistatic Tactical Planning Aid, a 3D decision support tool developed at the Centre.

### CONTACT

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