

# *U.S. Second Fleet / NATO Striking Fleet Atlantic*

## *Area Air Defense Control System*

The AADC module is an advanced planning and execution tool for a commander to perform duties as the area air defense commander (AADC) during a joint or combined operation. A significant improvement in automation allows reduction in the size of the staff that would be required to perform this role. Installation in aegis cruisers leverages off the existing air defense capability and expertise in the carrier battle group.

The installation in USS Mount Whitney is one of two deployed prototype systems developed by the applied physics laboratory of Johns Hopkins University. The second installation is in the USS Shiloh, an Aegis cruiser homeported in San Diego.

The AADC module has been used during numerous exercises such as joint task force exercises and fleet battle experiments with resounding success.

The AADC module provides the operational commander a near-real-time view of the battlespace by fusing data from existing sensor sources such as tactical data links and theater sensors.

The production system will be developed by general dynamics as part of the aegis cruiser conversion program. Six cruisers are programmed to have the installation completed by fy07.

The AADC is divided into two distinct modules. The planning module permits the development of air defense plans that integrate air, ground, and maritime air defense assets, while the current operations module directs the execution of the plan.

Silicon graphics computers process the billions of instructions required to develop integrated air defense plans and produce a robust, 3-dimensional display. A windows nt network allows seamless integration of the AADC module into the navy's existing networks.

The AADC module's automation is designed to minimize tedious work and allow the operator to focus on the mission. Some of the automation includes:

- ? Databases for commercial air routes, friendly assets, threat order of battle, major cities, country geographic boundaries.
- ? Voice recognition

- ? Enhanced symbol sets. The tracks look like what they represent.
- ? Mouse-driven operator interface

The planning system uses high fidelity modeling to represent the capabilities of air defense systems against ballistic missile and conventional air threats. The system has a built-in war gaming capability which subjects an air defense plan to a simulation test against possible enemy courses of action and provides the commander a quantitative analysis of the plan's effectiveness.