Lockheed Martin Conducts First Live Tracking Exercise With Aegis Open Architecture

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Following six months of simulated trials, Lockheed Martin successfully identified and tracked more than 60 live targets during the first live radar tracking exercise with the newest version of the Aegis Weapon System's SPY-1 radar control computer program, which features Aegis Open Architecture (OA).

Aegis OA is built using an Open Architecture Computing Environment (OACE) Category 3 infrastructure. OACE is a set of international standards designed to separate computing environments from requirements of custom software, speed the development of new applications and significantly reduce the cost of technology upgrades and refresh. The Navy has chosen OACE Category 3 as the first step in the service's move to an open computing environment.

Aegis OA will enhance the capabilities and extend the service life of the Aegis Weapon System by allowing the Navy to exploit commercial computing technology as well as install software and other technology upgrades faster and more cost-effectively throughout the life of a ship. Lockheed Martin also led the integration of an OACE infrastructure for U.S. Navy submarines.

The July 14 exercise employed the SPY-1 radar to demonstrate a radar control computer program that supports future system interoperability and software reuse across the Navy's next generation of warships -- such as the Littoral Combat Ship, the DD(X) destroyer and the CG(X) cruiser -- as well as Aegis-equipped ships currently in service.

"It should be clear to everyone that we are not just talking open architecture, but demonstrating it as well," said Rear Adm. Charles T. Bush, the Navy's program executive officer for Integrated Warfare Systems. "Our aggressive pursuit of open architecture components and systems is quickly becoming a reality."

The live track exercise represents a key milestone on the disciplined spiral approach to evolve the current Aegis architecture and computing environments. The first phase, to be completed next year and fielded through the Cruiser Modernization Program, will upgrade the radar control architecture and computing environment for all SPY-1 radar systems, beginning with SPY-1B/D radars. Subsequent work will focus on system architecture improvements and integration of the radar, weapons, navigation, undersea warfare and display systems.

"Aegis OA gives the Navy greater flexibility to continue to adapt the Aegis Weapon System for new and more complex missions - and to do it faster and at lower cost," said Orlando Carvalho, vice president of Lockheed Martin Maritime Systems & Sensors' Surface Systems line of business. "With a focus on whole-systems thinking, we are developing the Aegis OA so that the technology is transportable across all of the Navy's surface force, providing extensive commonality and linkage in a way that reduces acquisition and certification risk and cost."

Lockheed Martin's approach to open architecture is built on nearly a decade of "open system, rapid capability" deliveries to the Navy, including combat system, sonar, communications and electronic warfare capabilities. For example, Lockheed Martin's Acoustic Rapid Commercial Off-The-Shelf Insertion

(ARCI) program provides open architecture solutions for the Navy's submarine force. Since 1998, more than 50 ARCI systems have been installed on 40 submarines, consistently on schedule and under budget.

Headquartered in Bethesda, MD, Lockheed Martin employs about 130,000 people worldwide and is principally engaged in the research, design, development, manufacture and integration of advanced technology systems, products and services.

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