Lockheed Martin Advanced Surveillance System For Submarines Receives Technology Achievement Award

Lockheed Martin recently received Prince William County's "2006 Technology Achievement Award" for developing the Integrated Submarine Imaging System (ISIS), an advanced, digital imaging and processing system that revolutionizes surveillance capabilities for U.S. Navy submarines.

Developed in collaboration with Kollmorgen Electro Optical, ISIS replaces the optical light path of existing submarine periscopes with an advanced system that integrates new periscope-mounted high-resolution cameras and fiber optic digital imagery while allowing images to continue to be viewed via the optical path. An onboard suite of video processing equipment allows the real-time display and analysis of video images on existing submarine control room tactical displays. Lockheed Martin engineers at the company's Manassas facility designed the ISIS inboard computer processing system and displays for the U.S. Navy's submarine force.

ISIS is being installed aboard USS Hampton this month, making it the first U.S. Navy submarine to receive the system. ISIS will eventually become the Virginia-class submarine image processing system.

"This revolutionary system changes the paradigm of how the submarine commander uses the periscope," said Eric Gruenloh, Lockheed Martin's ISIS program manager. "Instead of having a limited field of view, with one eye strained into an eyepiece and arms draped over the handles of the periscope, the conning officer manipulates an outboard camera with a joystick while looking at digital video on a computer monitor. That same digital video is shared with the entire combat team on various displays aboard the submarine."

ISIS also provides submarine operators with image enhancement capabilities and analysis tools for both real-time and recorded imagery; supplied active and passive range finding control; and recording, storage and recall capabilities for imagery and associated data. Infrared cameras provide enhancements to the images which can be transmitted off the submarine to other naval and joint forces.

"ISIS is a great example of how we take a variety of existing technologies and create new capabilities for those who serve our country at sea," added Gruenloh. "The need to have the submarine commander or conning officer handle a traditional periscope will become part of naval history as ISIS is installed in the U.S. Navy's submarine force."

Lockheed Martin received the "2006 Technology Achievement Award" for its "innovative application of existing technology" during the Prince William County Economic Development Council's annual Business Appreciation Week Luncheon on May 18.

Headquartered in Bethesda, MD, Lockheed Martin employs about 135,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services.

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