Lockheed Martin Verifies Integrated Beam Control Performance For Missile Defense Agency's Airborne Laser

Lockheed Martin announced today that the performance of the fully integrated beam control/fire control system for the U.S. Missile Defense Agency's Airborne Laser (ABL) has been confirmed in a series of ground tests. The tests, which verified the performance of the recently installed illuminator lasers with the rest of the beam control/fire control system, were conducted on the ground inside the ABL YAL-1A aircraft, a modified 747-400F, at Boeing facilities in Wichita, Kan.

The Lockheed Martin-developed beam control/fire control system employs two illuminator lasers to accurately point and focus ABL's high-energy laser: the Raytheon-developed tracking illuminator, which determines the range to a target and where to point the high-energy laser; and, the Northrop Grumman- developed beacon illuminator, which is used to measure the atmosphere and compensate the beam of the high-energy laser.

The tests demonstrated the ability to control the path of the illuminator lasers and to control the high-energy laser beam as it travels at the speed of light toward its target. The program achieved a large majority of the objectives of the ground tests and expects to satisfy the remaining ones in the coming months. Lockheed Martin conducted the tests with the U.S. Missile Defense Agency, ABL prime contractor Boeing and industry partner Northrop Grumman.

"The results of the testing underscore the soundness of our technical approach," said Art Napolitano, ABL program director, Lockheed Martin Space Systems Company. "We functionally demonstrated ABL's ability to locate and track a target, illuminate the target to compensate for atmospheric disturbances and then precisely focus a surrogate laser beam on the target to destroy it."

Ground testing accomplishments for the beam control/fire control system included:

-- Verifying the alignment of the optical components that guide the lasers to the designated target;
-- Demonstrating the end-to-end capability to control and fire the illuminator lasers;
-- Demonstrating the ability of the beam control/fire control system and the Boeing-developed battle management system to track and target a ballistic missile, using a simulated target;
-- And, proving the ability to control a low-power surrogate for the high-energy laser and fire it at a simulated target.

Next, the ABL program will conduct in-flight testing of the fully integrated beam control/fire control system. The Northrop Grumman-developed high-energy laser, which achieved lethal power and run-times in a ground laboratory in 2005, will be installed in the ABL aircraft in 2007 to prepare for the program's missile shoot-down test in 2008.

ABL will provide the response necessary to destroy a ballistic missile during its boost phase, while it is still climbing in the Earth's atmosphere and before it can deploy its warheads. The ABL program is managed by the Missile Defense Agency and executed by the U.S. Air Force from Kirtland Air Force Base, Albuquerque. Boeing, the prime contractor for ABL, provides the modified aircraft and the battle management system and is the overall systems integrator. ABL partners are Northrop Grumman, which supplies the high-energy laser and the beacon illuminator laser, and Lockheed Martin, which provides the nose-mounted turret in addition to the beam control/fire control system.

Lockheed Martin is a world leader in systems integration and the development of air and missile defense systems and technologies, including the first operational hit-to-kill missile. It also has considerable experience in missile design and production, infrared seekers, command and control/battle management, and communications, precision pointing and tracking optics, as well as radar and signal processing. The company makes significant contributions to all major U.S. missile defense systems and participates in several global missile defense partnerships.

Headquartered in Bethesda, Md., Lockheed Martin employs about 140,000 people worldwide and is principally engaged in the research, design, development, manufacture, integration and sustainment of advanced technology systems, products and services. The corporation reported 2005 sales of $37.2 billion.

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