

# U.S. Air Force/Lockheed Martin Team Achieves Key Ground Segment Milestone For Nation's Space-Based Missile Warning System

The U.S. Air Force/Lockheed Martin team developing the Space-Based Infrared System (SBIRS) program has achieved two key milestones: a testing milestone demonstrating that the ground system is on track to support launch of the first SBIRS geosynchronous (GEO-1) satellite in the constellation, and a maturity milestone moving the ground system into the next level of integration.

SBIRS will deliver unprecedented, global, persistent infrared surveillance capabilities by providing early warning of missile launches, and simultaneously supporting other missions including missile defense, technical intelligence and battlespace awareness.

The testing milestone, known as the Combined Day-In-The-Life Test (CDITL), validated the functionality, performance, and operability of the SBIRS GEO ground system for its planned operational use. The campaign included testing of over 1.5 million source lines of code and 133 ground segment requirements. The new SBIRS ground system includes software and hardware necessary to perform activation, checkout and initial operations of the GEO-1 satellite after launch. SBIRS uses "Day-In-The-Life" test events to validate the integrated ground system, following successful verification at the segment level.

Colonel Winthrop Idle, the U.S. Air Force SBIRS Wing's Ground Systems Group Commander said, "Our ground system performed very well. This test paves the way for the SBIRS program to provide a new, even more impressive level of information to the warfighter with the GEO system. The exceptional performance of the ground system is a true testament to the hard work and dedication put forth by our strong government and industry team."

The CDITL test integrated several geographically separated sites used for command and control, factory engineering support and direct interface to mission data users. The 17-day test included the use of high-fidelity spacecraft simulators to complete the launch and early orbit test processes and products that will be used for GEO-1 launch. Each site contributed significantly to the observed stability, robustness and operability of the SBIRS system.

"We are extremely pleased with the team's dedication and effort in delivering the cornerstone for a significantly enhanced early warning and intelligence capability for the warfighter," said Dave Sheridan, Lockheed Martin's SBIRS GEO-1 program director. "SBIRS is now another step closer to fielding this critical capability and achieving total mission success for our customer."

Completion of the ground segments verification process and the CDITL led to the readiness milestone, known as the System Integration Readiness Review. This event, completed on January 12, officially moves the ground segment into the next level of integration. The Sunnyvale based System Engineering, Integration and Test group formally accepted the ground's delivery for system level integration, to include multiple end-to-end test and rehearsal events with space vehicle simulators and the GEO-1 vehicle itself. This series of events are the final efforts that lead to system and operations readiness to launch and operate the GEO-1 space vehicle.

The first SBIRS GEO spacecraft recently completed thermal vacuum testing, the most comprehensive and the largest risk mitigation component of the integrated spacecraft environmental test program. The satellite is planned for delivery to Cape Canaveral Air Force Station in late 2010 where it will then undergo final processing and preparation for launch aboard an Atlas V launch vehicle.

The SBIRS team is led by the Space Based Infrared Systems Wing at the U.S. Air Force Space and Missile Systems Center, Los Angeles Air Force Base, Calif. Lockheed Martin Space Systems Company, Sunnyvale, Calif., is the SBIRS prime contractor, with Northrop Grumman Electronic Systems, Azusa, Calif., as the payload integrator. Air Force Space Command operates the SBIRS system.

Lockheed Martin's SBIRS contract includes the two highly elliptical orbit (HEO) payloads now on-orbit, two geosynchronous orbit (GEO) satellites, as well as ground-based assets to receive and process the infrared data. The team was recently awarded a \$1.5-billion contract for the third HEO payload, the third GEO-3 satellite and associated ground modifications. The program has also begun advanced procurement of long-lead components for a fourth HEO payload and a fourth GEO satellite.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that 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 2008 sales of \$42.7 billion.

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