First SBIRS GEO Satellite With New Flight Software Completes Key Test At Lockheed Martin

The first Space-Based Infrared System (SBIRS) geosynchronous orbit (GEO-1) satellite, built by a Lockheed Martin team for the U.S. Air Force, has successfully completed a major test utilizing new flight software that will enable highly reliable spacecraft command and control operations.

The SBIRS program is designed to provide early warning of missile launches, and simultaneously support other missions including missile defense, technical intelligence and battlespace awareness.

The successful test of the GEO-1 spacecraft, known as Baseline Integrated System Test (BIST), was conducted from Jan. 2 to Jan. 27, 2009 at Lockheed Martin's Space Systems facilities in Sunnyvale, Calif. The test characterized the performance of the integrated satellite and established a performance baseline prior to entering thermal vacuum testing.

"This achievement is another example of our effective collaboration and joint commitment to successful execution of this critical national system," said Col. Roger Teague, the U.S. Air Force's SBIRS Wing Commander. "The team executed a smooth and efficient test, giving us high confidence that we are ready to enter thermal vacuum testing, one of our most critical program milestones."

Lockheed Martin's SBIRS flight software architecture is designed to enable robust command and data handling, fault management and safe-hold capabilities on the GEO satellite system.

"The fully-integrated GEO-1 satellite utilizing our new flight software architecture performed with outstanding results," said Jeff Smith, Lockheed Martin's SBIRS vice president. "We look forward to proceeding with thermal vacuum testing and delivering the first-of-its-kind data from this spacecraft to the warfighter."

The new flight software used during BIST contains applications that control space vehicle electrical power, temperature, attitude and navigation. It also features a robust fault management system, which responds when an anomaly is detected during on-orbit operations, putting the satellite into a safe state while ground operators analyze the situation and take corrective action.

Delivery of the final flight software block is planned for February to support thermal vacuum testing which will validate spacecraft performance at temperature extremes greater than those expected during on-orbit operations. The spacecraft is planned for delivery to the Air Force in fiscal year 2010 in 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 current SBIRS contract includes the two HEO payloads now on-orbit, two GEO satellites, as well as ground-based assets to receive and process the infrared data. The program is in the early stages of adding additional GEO spacecraft and HEO payloads to the planned constellation.

Headquartered in Bethesda, Md., Lockheed Martin is a global security company that employs about 146,000 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.

NOTE TO EDITORS: for low- and high-resolution JPEG image files of SBIRS, please visit our SBIRS web page at: http://www.lockheedmartin.com/sbirs/

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