Lockheed Martin Delivers New Flight Software Architecture For SBIRS GEO Spacecraft

PARIS AIR SHOW -- Lockheed Martinannounced today that it has delivered the final block of a new flight software architecture that will provide highly reliable spacecraft command and control operations for the Space-Based Infrared System (SBIRS) geosynchronous orbit (GEO) satellite constellation.

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.

Leveraging software and systems expertise from across the Corporation, Lockheed Martin Space Systems, Sunnyvale, Calif. designed, developed and validated an enhanced SBIRS flight software architecture that will enable robust command and data handling, fault management and safe-hold capabilities on the GEO satellite system.

The SBIRS GEO fault management system responds when an anomaly is detected during on-orbit operations, putting the satellite into a safe state while operators on the ground analyze the situation and take corrective action.

The flight software architecture and implementation consists of two blocks that have been delivered incrementally to support the pre-launch integration and test schedule of the GEO satellite. The previous major increment was delivered in December 2008 to support Baseline Integrated Systems Test (BIST), which characterized the performance of the integrated GEO-1 satellite and established a performance baseline prior to entering thermal vacuum testing.

Delivery of the final flight software block will support thermal vacuum testing to 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.

"Working in partnership with our customer and leveraging key talent from across Lockheed Martin, the team has delivered a flight software solution that will ensure efficient and reliable GEO system operations," said Jeff Smith, Lockheed Martin's SBIRS vice president and program manager. "With this delivery, we are on track to proceed with thermal vacuum testing, a critical step in preparing this vitally important spacecraft for flight."

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. A contract to include a fourth HEO payload and potential fourth GEO satellite is expected to be awarded later this year.

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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