# Lockheed Martin SBIRS Team Delivers Major Subsystems For Second GEO Satellite

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The Lockheed Martin -led team developing the U.S. Air Force's Space-Based Infrared System (SBIRS) has achieved major milestones on the second geosynchronous orbit (GEO-2) spacecraft with the completion and delivery of the remaining major spacecraft bus subsystems. The GEO-2 spacecraft core structure and propulsion subsystem was recently completed and the high-performance communications subsystem for the spacecraft was delivered in early December.

Developed and tested at Lockheed Martin's facilities in Newtown, Pa., and delivered to its Space Systems Company in Sunnyvale, Calif., the communications subsystem will deliver anti-jam, survivable communications and data from the infrared payload to the warfighter and provide worldwide coverage of missile launch detection and defense data. The subsystem also provides secure command and control of the satellite by continuous interaction with ground stations.

The propulsion subsystem is essential for maneuvering the satellite during transfer orbit to its final location as well as conducting on-orbit repositioning maneuvers throughout its mission life. It was developed at Lockheed Martin's Mississippi Space & Technology Center, an advanced propulsion, thermal, and metrology facility located at the John C. Stennis Space Center. The SBIRS propulsion subsystem design is based on Lockheed Martin's flight-proven A2100 geosynchronous spacecraft series and consists of 18 reaction engine assemblies, a fuel tank, two oxidizer tanks, and a liquid apogee engine.

In April 2009 the fully tested GEO-2 Infrared Payload will be delivered by Northrop Grumman Electronic Systems, Azusa, Calif., for integration into the flight configuration, leading to the start of the vehicle integrated test flow in the summer of 2009 and launch in fiscal year 2011.

"The team has maintained excellent focus on meeting GEO-2 delivery commitments while achieving the significant GEO-1 environmental test milestones that lead to the critical launch of the first GEO satellite," said Keoki Jackson, Lockheed Martin's SBIRS GEO-2 program manager.

SBIRS is designed to provide early warning of missile launches, and simultaneously support other missions including missile defense, technical intelligence and battlespace characterization. Lt Col Heath Collins, the Air Force SBIRS Space Squadron Commander, noted that "the combined team continues to make substantial progress as we work together to deliver unprecedented SBIRS capabilities to the warfighters and national decision makers."

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.

As the SBIRS prime contractor, Lockheed Martin Space Systems Company provides program management, the GEO spacecraft bus, HEO and GEO payload pointing, and system engineering and integration. Lockheed Martin Information Systems & Global Services builds and maintains the SBIRS ground segment which has been operational since 2001. Northrop Grumman is the major subcontractor and provides the HEO and GEO payloads and participates in ground system development and systems engineering.

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 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 2007 sales of $41.9 billion.

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