SBIRS

MISSILE DEFENSE EARLY WARNING SATELLITE

LOCKHEED MARTIN

GLOBAL, PERSISTENT INFRARED SURVEILLANCE

Built by Lockheed Martin, the U.S. Air Force's Space Based Infrared System, or SBIRS, is an orbiting network of satellites in Geosynchronous Earth Orbit (GEO), payloads in Highly Elliptical Orbit (HEO), and flexible ground processing and control systems that provide a continuous view of the Earth's surface. Using scanning sensors for wide-area surveillance and staring sensors to focus on smaller regions of interest, SBIRS collects and transmits infrared (IR) data that is vital for early missile warning and defense.

GEO SATELLITE

GEO satellites detect and track missile launches worldwide

- A2100-derived spacecraft, 12-year design life, 9.8-year mean mission duration
- ~10,000-pound satellite powered by ~2,800 watt-capable solar arrays
- Three-axis stabilized with 0.05-degree pointing accuracy; solar flyer altitude control
- On-orbit reloadable flight software
- GPS receiver with Selected Availability Secure Anti-Spoof Module
- ~1,000-pound payload; scanning and staring sensor
- Three colors: short-wave, mid-wave and see-to-ground sensor chip assemblies
- Short Schmidt telescopes with dual optical pointing
- Agile, precision pointing and control for accurate IR reporting on launch points, trajectory and impact points
- Secure, encrypted communications links for normal, survivable and endurable operating modes
- Delivers both processed and wideband data to the ground

HEO PAYLOAD

Hosted sensors survey the North Polar region or support other IR detection missions

- ~600-pound payload with scanning IR sensor
- Three colors: short-wave, mid-wave and see-to-ground sensor chip assemblies
- Agile, precision gimbal pointing and control
- Passive thermal cooling
- 100 Mbps wideband data rate to ground

GROUND SYSTEM

Ground assets manage data from satellites, payloads and the legacy Defense Support Program using a distributed, high-availability server architecture

Key Functions:

- Mission planning/payload tasking
- Constellation management/telemetry tracking and commanding
- Mission processing, event reporting and data distribution

Ground Control:

- Operating modes include normal, survivable and endurable
- Worldwide primary & backup mission control stations, relay ground stations

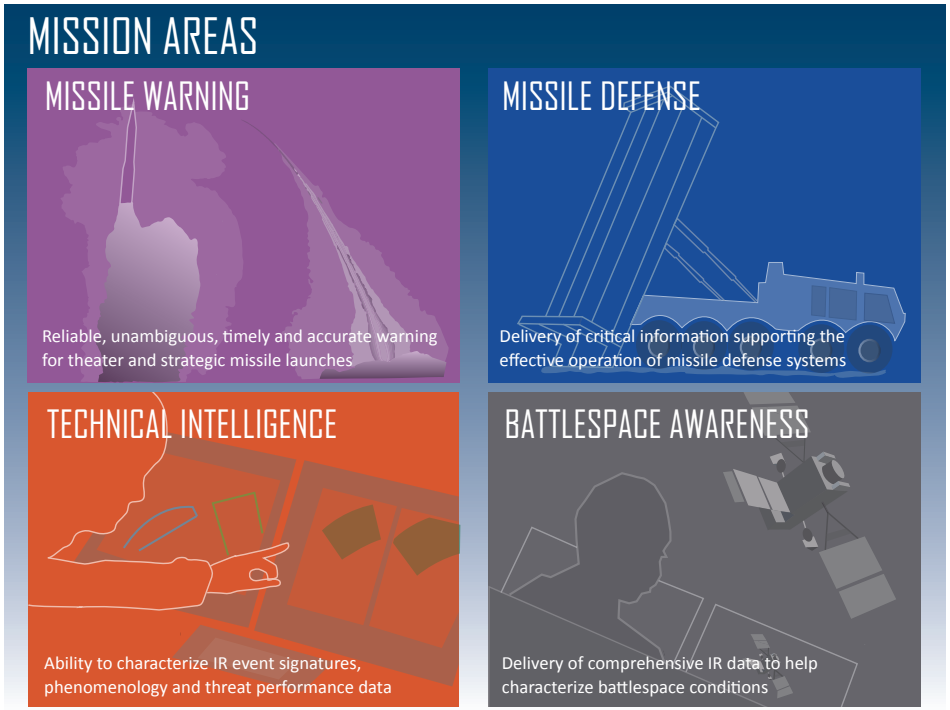
EVOLVING SBIRS

GEO-5 and GEO-6

The newest missile warning satellites are based on the modernized A2100 spacecraft—a no-cost update that reduces costs and cycle times while increasing the potential to incorporate future, modernized sensor suites.

Beyond Missile Warning

A powerful asset for situational awareness, data from SBIRS is being applied across areas like battlespace awareness, intelligence and 24/7 tactical alerts. Additionally, the Air Force's Data Utilization Lab is bringing together government, industry and academia to better understand how SBIRS data can be applied for both civil and military applications.



SBIRS TEAM

The SBIRS development team is led by the Remote Sensing Systems Directorate at the U.S. Air Force Space and Missile Systems Center, Los Angeles Air Force Base, California. Lockheed Martin is the SBIRS prime contractor, with Northrop Grumman Aerospace Systems as the payload integrator. The 460th Space Wing, Buckley Air Force Base, Colorado, operates the SBIRS system.

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For more information about SBIRS visit: www.lockheedmartin.com/SBIRS