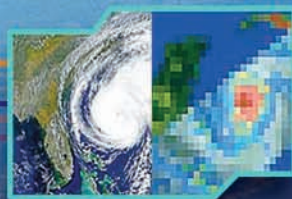
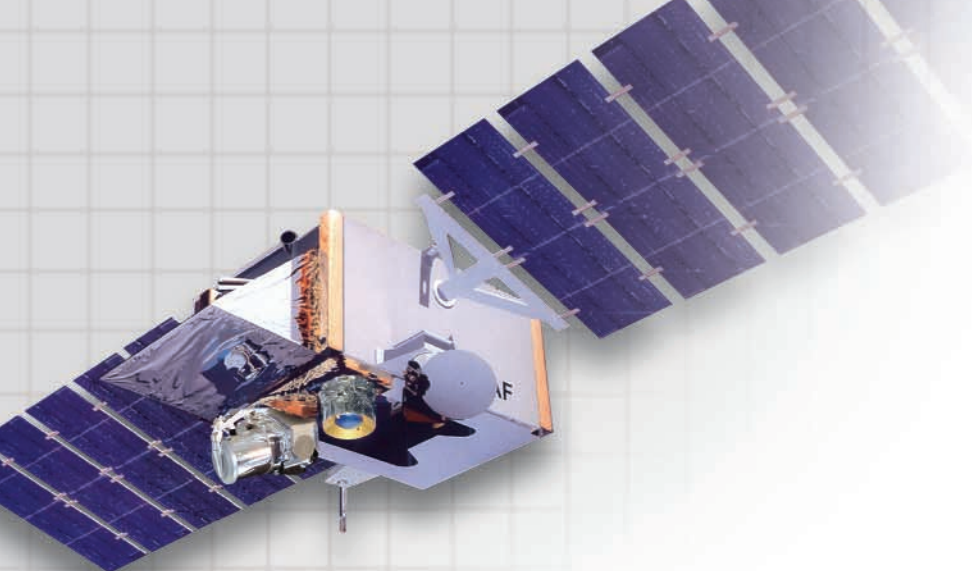




Raytheon SBIRS Low Sensor Payload

*Next generation sensor technology stands ready
to protect against evolving threats*





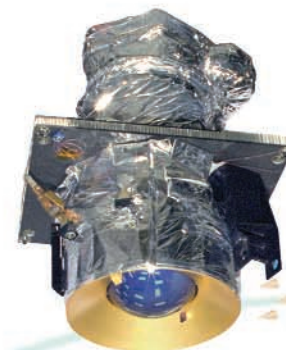
Space Based Infrared System (SBIRS) Low Sensor Payload

The Raytheon SBIRS Low sensor payload was developed for the continual observation of ballistic missiles in the boost, midcourse, and reentry phases of flight. Composed of an acquisition sensor, a tracking sensor, and a processing subsystem, the SBIRS Low sensor payload will provide protection from evolving threats. These state-of-the-art components successfully demonstrated performance in thermal vacuum tests against simulated targets.

Raytheon

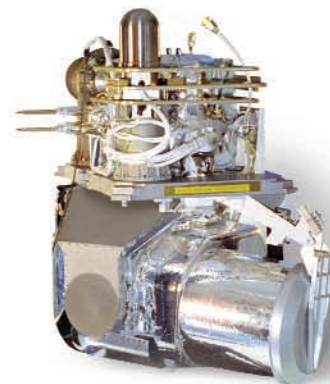
Electronic Systems

Surveillance &
Reconnaissance Systems



Acquisition Sensor

The acquisition sensor provides high resolution horizon-to-horizon coverage for detecting and tracking missiles in the boost phase. It has a wide field-of-view scanning refractive telescope with only one moving element. The shortwave infrared focal plane array is cooled by a passive cryoradiator/heatpipe system.



Track Sensor

After receiving a hand-over signal from the acquisition sensor or external cueing from other assets, the tracking sensor continues tracking a missile through the midcourse phase, including hit assessment. The tracking sensor features a narrow field of view and agile telescope, providing coverage below and above the horizon. The sensor is cooled to cryogenic temperatures so that it can detect dim objects in space such as missiles after burnout, and post-boost vehicles. These features are critical for discriminating lethal objects.



Signal & Data Processing

The signal and data processor system has demonstrated the ability to receive and filter an enormous 2.1 gigabits of data per second — equivalent to reading an entire set of encyclopedias six times in one second. This impressive processing rate is accomplished in a processor that is ten times smaller than processors with similar capability, and it requires only 175 watts of power — a 10-fold decrease in power requirement. The processor and software will simultaneously detect and track more than 100 objects in real time, detecting potential missile and warhead targets against vast amounts of infrared clutter and noise.