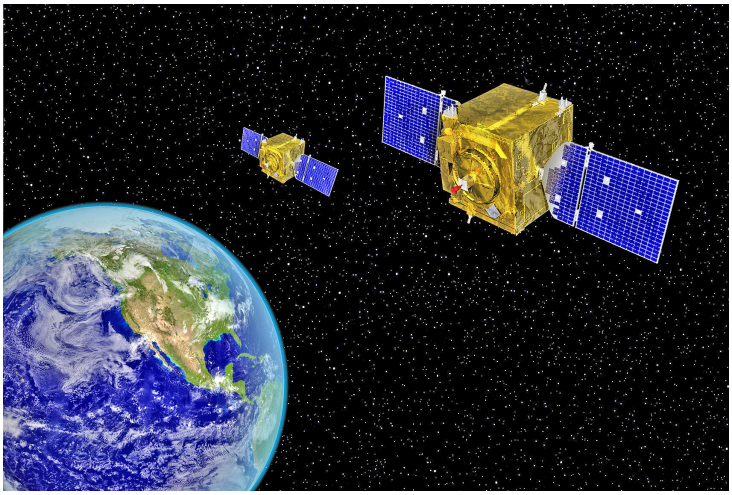
Geosynchronous Space Situational Awareness Program (GSSAP)

Executive Summary
- The Air Force operationally accepted and declared Initial Operational Capability (IOC) for the Geosynchronous Space Situational Awareness Program (GSSAP) on September 29, 2015.
- The Air Force Operational Test and Evaluation Center (AFOTEC) conducted IOT&E for GSSAP from August 2015 to January 2016 in accordance with the DOT&E-approved Test and Evaluation Master Plan (TEMP) and operational test plan.
- Operational testing of GSSAP was adequate to support an initial but incomplete evaluation of the system's operational effectiveness, suitability, and survivability. The Air Force should conduct FOT&E with adequate threat representation and statistical rigor to resolve unassessed, inconclusive, and shortfall measures from IOT&E.
- GSSAP is effective for some intended operations, but not for others. GSSAP is not suitable due to the inadequacy of operator training and training systems, and dependence on other mission systems with reliability and availability shortfalls. GSSAP survivability is inconclusive.

System
- GSSAP is a space-based, space situational awareness (SSA) capability operating in near-geosynchronous orbit, supporting U.S. Strategic Command (USSTRATCOM) SSA operations as a dedicated Space Surveillance Network sensor.
- The GSSAP system consists of satellites and a ground segment that controls the satellites and receives and processes GSSAP mission data.

Mission
- The 1st Space Operations Squadron, of the Air Force Space Command's 50th Space Wing at Schriever AFB, Colorado, employs GSSAP to satisfy SSA mission tasking from USSTRATCOM's Joint Functional Component Command for Space.
- GSSAP is intended to track and characterize man-made orbiting resident space objects at and near the 22,236 mile (35,786 km) geosynchronous orbit altitude, to contribute to timely and accurate resident space object orbit predictions, knowledge of the geosynchronous orbit environment, and safety of space flight through satellite collision avoidance.



Major Contractor
Orbital ATK – Dulles, Virginia

Activity
- The Air Force operationally accepted and declared IOC for GSSAP on September 29, 2015.
- AFOTEC conducted IOT&E for GSSAP from August 2015 to January 2016 in accordance with the DOT&E-approved TEMP and operational test plan.
- Prior to the IOT&E, the Air Force conducted developmental T&E from August 2014 to July 2015, and integrated T&E from July 2015 to August 2015. In order to decrease the delay from launch to operational availability and to preserve spacecraft operational lifespan, with prior DOT&E approval, AFOTEC used data collected during both developmental and integrated T&E in its OT&E analysis and report.

Assessment
- Operational testing of GSSAP was adequate to support an initial but incomplete evaluation of the system's operational effectiveness, suitability, and survivability. The Air Force should conduct FOT&E with adequate threat representation and statistical rigor to resolve unassessed, inconclusive, and shortfall measures from IOT&E.

- GSSAP is effective for some intended operations, but not for others. GSSAP is not suitable due to the inadequacy of operator training and training systems, and dependence on other mission systems with reliability and availability shortfalls. GSSAP survivability is inconclusive.

Recommendations

- Status of Previous Recommendations. This is the first annual report for this program.
- FY16 Recommendations. The Air Force should:
  1. Conduct FOT&E with adequate threat representation and statistical rigor to resolve unassessed, inconclusive, and shortfall measures from IOT&E.
  2. Address the recommendations detailed in the classified DOT&E report.