# Milstar - Satellite System

**Executive Summary**

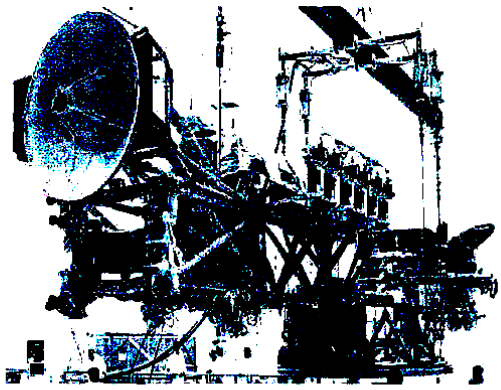
- The testing of Milstar demonstrated that the system is effective and suitable for operational military missions.
- The Milstar System Endurance operational retests are complete.
- The Air Force Operational Test and Evaluation Center (AFOTEC) completed final Milstar system OT&E in July 2005.

**System**

- The Milstar system consists of three segments:
  - Space Segment
  - Mission Control Segment
  - Terminal (or User) Segment
- The Air Force launched six Milstar satellites between 1994 and 2003.
- The third Milstar launch placed the first low-data rate/medium-data rate (LDR/MDR) satellite (Flight 3) in a non-operational orbit. In lieu of an additional Milstar satellite to replace Flight 3, Air Force Space Command and the U.S. Strategic Command elected to wait for the first Advanced Extremely High Frequency (AEHF) satellite flight.
- The AEHF spacecraft is currently being developed to function as the replacement to the Milstar system.
- The first of the new AEHF system spacecraft (Pathfinder) is currently scheduled for launch in the 2008 timeframe.

**Mission**

- Combatant commanders and operational forces worldwide use the Milstar Satellite System to provide protected, responsive, and survivable military Satellite Communications (SATCOM) capability for ground, airborne, and maritime forces.
- The Milstar satellite system provides strategic and tactical mission accomplishment through global communications that are secure, jam-resistant, survivable, and have a low probability of intercept.
- The Air Force Space Command declared Initial Operational Capability (IOC) 1 for military forces of the LDR Milstar system in July 1997 and declared IOC 2 for the MDR system in December 2003.



**Activity**

- AFOTEC conducted the Milstar MDR Multi-Service Operational Test and Evaluation (MOT&E) from September 2001 to December 2004 in accordance with DOT&E approved system test plans.
- The Final Milstar system OT&E report was completed in July 2005. The testing of the MDR/LDR capabilities of the Milstar system was accomplished with an extensive series of combined developmental/operational testing and dedicated operational test events.
- AFOTEC completed the last of the Milstar System Endurance retests in accordance with the DOT&E-approved Milstar Test and Evaluation Master Plan.
- With completion of the current AFOTEC portions of Milstar system testing, responsibility will shift to Air Force Space Command to accomplish the testing associated with Milstar Force Development Evaluation activities.

**Assessment**

- The operational Milstar space system provides a highly valuable and significant improvement in protected global military communications.
- Operational testing of Milstar demonstrated that the system is effective and suitable for military missions.
- The results of MOT&E led to integrated system modifications that have enhanced the overall operational effectiveness of the information assurance features of the Milstar system.
- The operational testing of Milstar highlighted the need for:
  - A more detailed Joint Task Force Concept of Operations for the MDR mission
  - Enhanced integration testing of the operational mission planning element
  - Expanded interoperability and anti-jam nuller testing for the AEHF SATCOM mission

**Recommendations**

1. Air Force testing of the remaining system features and enhancements for Milstar (i.e., realistic anti-jam nuller and mission planning element) should be fully integrated into the structure of the operational testing currently being developed for the AEHF SATCOM program.
2. The Air Force should continue to refine the Joint Task Force Concept of Operations for the Milstar system.
3. The Air Force should apply the information gained from system interoperability tests to both current Milstar operations and AEHF development.