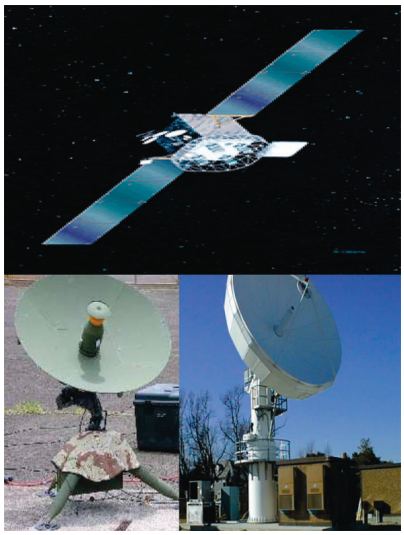
Global Broadcast Service (GBS)

Executive Summary
- The new Global Broadcast Service (GBS) Test and Evaluation Master Plan (TEMP) was approved by DOT&E in September 2005.
- The GBS Multi-Service Operational Test and Evaluation (MOT&E) occurred in September and October 2005.
- Results of this testing will be presented as part of the DOT&E beyond low-rate initial production (BLRIP) report expected in 2006.

System
- The GBS is a satellite-based broadcast system providing near worldwide, high capacity, one-way transmission of operational military data.
- The GBS system consists of three segments:
  - The Space segment of the current GBS phase includes four GBS transponders on each of three Ultra High Frequency follow-on satellites and additional government leased satellite capability to meet operational demand.
  - The Transmit segment broadcasts data streams and manages the flow of selected information through the orbiting satellites for broadcast to the appropriate theaters of operation.
  - The Receive segment extracts the appropriate information for distribution to the end users within selected areas of operation.
- The GBS is being developed to augment and interface with other military communications systems such as DoD Teleport.



Mission
- Combatant commanders and operational forces worldwide use GBS to provide a continuous high-speed and high-volume flow of data, audio, imagery, and video at multiple classification levels for sustained operations.
- The GBS capability to provide intelligence and battlespace weather increases the joint operations mission data available to deployed and garrisoned military forces across the globe.

Activity
- The Air Force Operational Test and Evaluation Center (AFOTEC) completed an Operational Assessment (OA) for GBS in January 2005. This OA noted increased maturity in each of the operational system segments and satisfactory progress toward achieving system readiness for dedicated OT&E.
- DOT&E approved a new GBS TEMP integrating the testing of vital system capabilities in September 2005.
- AFOTEC conducted the GBS MOT&E-1 September 16 to October 28, 2005, in accordance with DOT&E-approved test plans. MOT&E-1 focuses on the effectiveness and suitability of the GBS user segment receiver suites as well as the overall GBS system to meet the needs of the warfighters. Results will provide the basis for DOT&E's BLRIP report. Operational testing locations include Hanscom Air Force Base, Massachusetts; Norfolk, Virginia; Fort Drum, New York; Fort Hood, Texas; Fort Monmouth, New Jersey; Hurlbert Field, Florida; Duke Field, Florida; Camp Pendelton, California; and an operational Naval Vessel.
- MOT&E-2 testing scheduled for 2006-2007 focuses on the full military functionality of the broadcast system. This testing includes the Theater Injection Points of the Transmit Segment, and end-to-end effectiveness and suitability.

Assessment
- The AFOTEC OA of January 2005 showed continued progress in areas related to overall effectiveness for segments of the current operational GBS system.
- The GBS upgrade transition to an Internet Protocol capability is making progress in delivering increased volumes of high-speed data compared to the previous mission configuration.
- The GBS system is able to properly receive both unclassified and classified data transmissions for operational military users.

- The GBS MOT&E-2 test strategy may require updates to meet the needs of the system users. MOT&E-2 Phase II testing is also applicable to the Wideband Gapfiller Satellite (WGS) contribution to GBS levels of service. The MOT&E-2 Phase II will include the WGS portion of service after the launch of the first WGS satellite in 2007.
- The GBS Theater Injection Points of the Transmit Segment will need to examine baseline configurations that more directly address the needs of joint military forces.

Recommendations

1. The Air Force should determine if the GBS MOT&E-2 test strategy requires updating to meet the current user expectations for an Initial Operational Capability declaration.
2. The GBS Theater Injection Points should be configured and tested consistent with the implementation configurations identified by U.S. Joint Forces Command and U.S. Strategic Command.