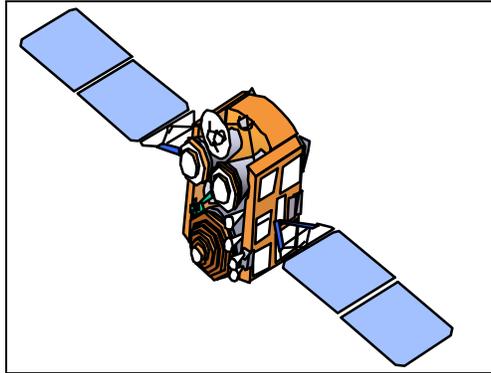


WIDEBAND GAPFILLER SATELLITE (WGS)



The Wideband Gapfiller Satellite (WGS) communications system will provide communications to the US warfighters, Allies, and Coalition Partners during all levels of conflict short of nuclear war. It is the next generation wideband component in DoD's future Military Satellite Communications (MILSATCOM) architecture.

WGS will satisfy military communications needs by providing communications in both the X-band and military Ka-band frequencies. It will combine capabilities onto a single satellite for tactical X-band communications, augment the Global Broadcast Service (GBS) Phase II system, and provide new two-way Ka-band services. This new service is being introduced to alleviate the spectrum saturation of X-band, and should greatly increase both the available single-user data rate and total satellite capacity over today's DSCS III satellites.

BACKGROUND INFORMATION

The satellite segment is being acquired by the Air Force under the FAR Part 12 rules for commercial item acquisition. Because of its commercial nature, this program has no lead-in development phase, but will proceed directly from award to launch in one combined EMD/Production phase. The development schedule is three years, with first launch in 1QFY04. The final two launches are planned for 1Q and 3QFY05. The ground control segment is being acquired by the Army. The WGS space and ground segments and the GBS program are all being integrated by the MILSATCOM Joint Program Office (MJPO).

The 2001 Defense Appropriations Act signed on August 9, 2000, limited funding to two satellites. Subsequently, the Office of the Secretary of Defense (OSD) signed a Program Decision Memorandum (PDM) on August 22, 2000 supplementing WGS funding by \$272.9 million to ensure funding of the complete constellation of three satellites.

TEST & EVALUATION ACTIVITY

Test and evaluation planning continued in FY01 for the WGS system. A Milestone II/III TEMP was approved by DOT&E on October 26, 2000. AFOTEC completed an early operational assessment

(EOA) of the Wideband Gapfiller Satellite (WGS) system September 2000 in support of a combined milestone II/III decision.

TEST & EVALUATION ASSESSMENT

DOT&E received the WGS EOA outbrief on November 7, 2001, with the following issues highlighted:

- The complexity of cross-banding between the X-band and Ka-band on board the satellite and the concurrent development of the Gapfiller Satellite Configuration Control Element (GSCCE) with the automation upgrades of the Satellite Operations Center (SOC) and Defense Satellite Communications System (DSCS) Operations Center (DSCSOC) networks pose a risk to successful WGS development and implementation.
- Interoperability and compatibility requirements compound the complexity of developing the control software for WGS. The Gapfiller Satellite Configuration Control Element (GSCCE) used to control WGS payloads must be interoperable with the Defense Satellite Communications System Operations Center (DSCSOC) network. An ongoing Army software development program is upgrading the DSCSOC network to a new ODOCS system. This is separate from the concurrent WGS program to produce the GSCCE. If the GSCCE and the ODOCS are not interoperable the DSCSOC operators will not be able to successfully establish communication networks with operational users.
- WGS and the Global Broadcast System (GBS) must be interoperable and compatible. GBS is fielding its support infrastructure to structure broadcasts and control the payloads on the UFO satellites. WGS payloads (at X and Ka-band) are proposed to be controlled by modified DSCSOCs, currently only capable of controlling X-band payloads. Interoperability between these two systems must be synergistic and not compete to ensure high-speed access for broadcast users.