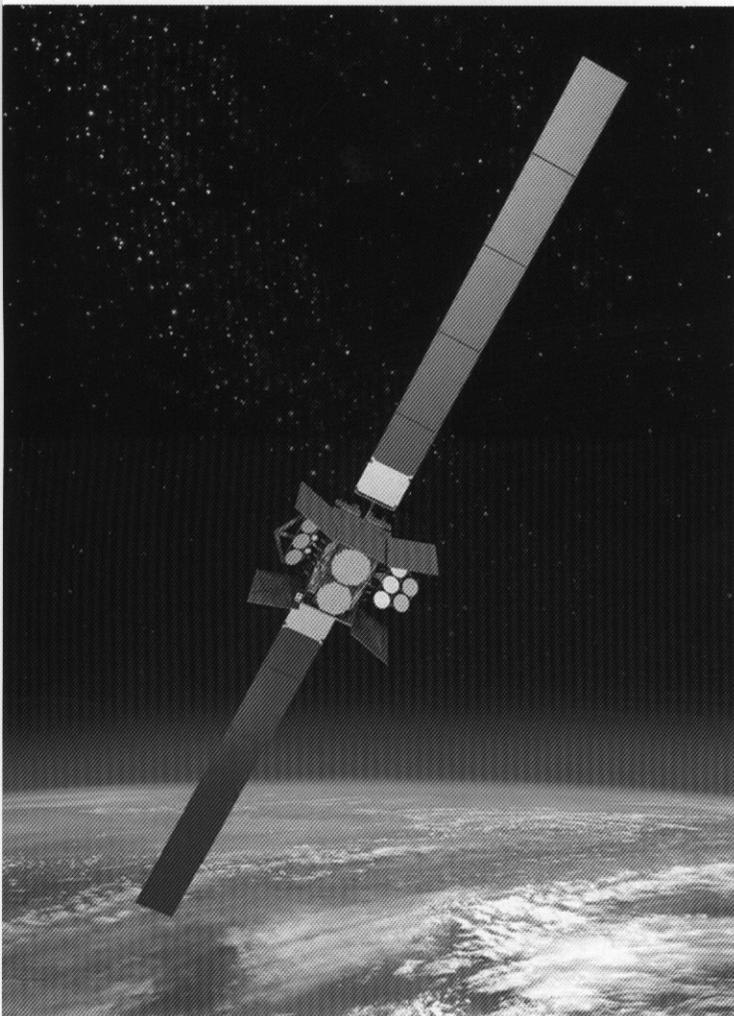


WGS

Wideband Gapfiller Satellites



Mission

Provide flexible, high-capacity communications for our Nation's warfighters by developing, launching, and testing the Wideband Gapfiller Satellites (WGS) and control systems. WGS will provide a quantum leap in communications bandwidth to our infrastructure users, soldiers, sailors, airmen, and marines.

Description

WGS is a multi-Service program that leverages commercial methods and technological advances in the satellite industry to rapidly design, build, launch, and support a constellation of highly capable military communications satellites.

Upon its first launch into geosynchronous orbit in 2005, WGS Flight 1 will be the Department of Defense's highest capacity communication satellite. Ultimately, three to five satellites will be on-orbit providing service in both the X and Ka-band frequency spectrums. WGS will augment X-band communications now provided by the Defense Satellite Communications System (DSCS) and one-way Ka-band service provided by the Global Broadcast Service (GBS). Additionally, WGS will provide a new two-way Ka-band service.

These digitally channelized, transponded satellites provide a quantum leap in communications capacity, connectivity and flexibility for U.S. military forces while maintaining interoperability with existing and programmed X and Ka-band terminals.

WGS will provide essential communications services for the Combatant Commanders (COCOMs) to command and control their tactical forces. Tactical forces will rely on WGS to provide high-capacity connectivity into the terrestrial portion of the Defense Information Systems Network (DISN).

The WGS program is the first near-commercial acquisition of a satellite by USAF. Ninety-five percent of the satellite bus will consist of commercial off-the-shelf (COTS) products. The contract is firm fixed price with a potential total scope of \$1.3 billion over 10 years and was awarded to Boeing Satellite Systems in January 2001.

The first WGS will be launched in 2005, and will be followed by two more in FY06. Both the Delta IV and Atlas V Evolved Expendable Launch Vehicles (EELV) will be used. Satellites 4 and 5 are being planned for launches in late FY09 and FY10, but are not yet on contract.

The Wideband Gapfiller Satellite system is composed of the following principal segments:

- Space Segment (satellites)
- Terminal Segment (users)
- Control Segment (operators)

The U.S. MILSATCOM Joint Program Office (MJPO), Space and Missile Systems Center (SMC), is responsible for development, acquisition, and sustainment of the WGS Program.

General Characteristics

Primary function:	High-capacity military communications satellite
Primary contractor:	Boeing Satellite Systems
Satellite Bus:	Boeing 702
Weight:	Approximately 13,000 lbs at launch, 7,700 lbs on-orbit
Orbit altitude:	22,300 miles
Payload:	Transponded, cross-banded-X and Ka-band communications suite
Antennas:	8 beam, transmit and receive X-band Phased arrays and 10 Ka-band Gimballed Dish Antennas, 1 X-band Earth coverage
Capability:	39 125-MHz Channels via digital channelizer/router
Launch vehicle:	Delta IV and Atlas V EELVs
Inventory:	Up to six
Unit Cost:	Approximately \$300 million
Control:	SGLS, USB, and in-band (X, Ka) control

WGS Brings Bandwidth to the Battlefield



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