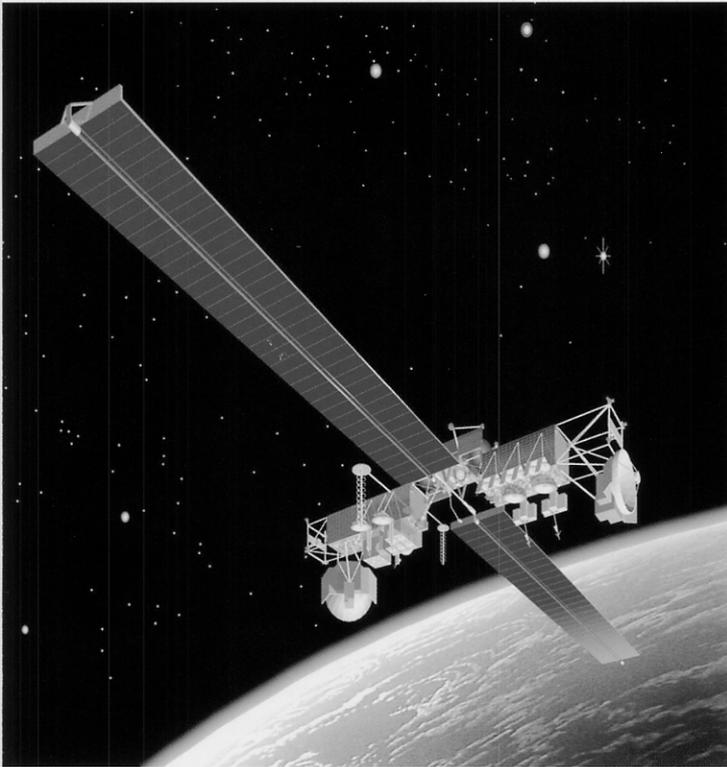


Milstar

Milstar System



Mission

Provide the President, Secretary of Defense, and the U.S. Armed Forces assured, survivable, and low probability of interception/detection satellite communications (SATCOM). Designed to penetrate enemy jammers and nuclear effects, Milstar is the most robust and reliable SATCOM system employed by the DoD.

Background

The objective of the Milstar program was to create a secure, nuclear survivable, space-based communication system (considered a top national priority during the Reagan Administration in the 1980s). Milstar was designed to perform all communication processing and network routing onboard, thus eliminating the need for vulnerable land-based relay stations and reducing the chances of communications being intercepted on the ground.

Description

Milstar is known as “the FedEx of communications systems—when it absolutely, positively has to be there, Milstar is the system.” Currently, there are four operational Milstar satellites and one more scheduled for launch in 2003.

The first two satellites (Milstar I) carry a low data rate (LDR) payload. The LDR payload can transmit 75 to 2400 bps of data over 192 channels in the extremely high frequency (EHF) range. Encryption technology and satellite-to-satellite crosslinks provide secure communications, data exchange, and global coverage.

The other three satellites (Milstar II) carry both LDR and medium data rate (MDR) payloads. The MDR payload can transmit 4800 bps to 1.544 Mbps of data

over 32 channels. The higher data rates provide the user the ability to transmit large amounts of data in a short period of time.

A key feature of the Milstar system is the interoperable terminals used by the warfighters of the U.S. Armed Forces. For example, sea-based terminals can be used to upload data onto cruise missiles carried aboard submarines and guided missile destroyers in real time. Land-based terminals provide communications and data exchange for the mobile, ground-based warfighter.

The Milstar system is acquired and sustained by the MILSATCOM Joint Program Office (MJPO). The Air Force has the primary responsibility for managing the \$6 billion program and is supported by the Navy, Army, and various DoD agencies.

General Characteristics

Primary function:	Survivable and protected communications
Primary contractor:	Lockheed Martin; TRW and Boeing subcontractors (LDR and MDR payloads, respectively)
Weight:	10,000 lbs
Orbit Altitude:	22,300-mile altitude (low incline, geostationary)
Payload:	LDR, MDR
Antennas:	LDR: Earth Coverage (uplink and downlink), Agile Beams (5 uplink, 1 downlink), 3 Spot Beams (2 Narrow, 1 Wide) MDR: 6 distributed users coverage areas (DUCA), 2 nulling
Capability:	LDR: Data rates of 75 bps–2.4 kps MDR: Data rates of 4.8 kps–1.544 Mbps
Launch Vehicle:	Titan IV–B/Centaur
Inventory:	4 on-orbit, 1 lost due to booster failure, 1 more launch 2003
Unit Cost:	Approximately \$800 million per satellite
First Launch:	7 Feb 1994

Milstar:

The Fed Ex of Communication Systems



MILSATCOM Joint Program Office
SMC/MC
2420 Vela Way
Suite 1467 A-8
El Segundo, CA 90245
310.336.4877 or 310.336.4826
<http://www.losangeles.af.mil/smc/mc>