

Mexsat Bicentenario

Hybrid C-band and Ku-band Commercial Communications Satellite



Mission Description

Orbital ATK was selected by the Boeing Company to provide the Fixed Satellite Services (FSS) segment of the Mexsat satellite system for the Federal Government of Mexico. The Mexsat system is a three satellite system consisting of two Mobile Satellite Services (MSS) spacecraft designed and built by Boeing (Mexsat Centenario and Mexsat Morelos 3) and one FSS satellite, Mexsat Bicentenario, designed and built by Orbital ATK.

Mexsat Bicentenario is based on Orbital ATK's GEOSTAR-2™ platform, generates approximately 3.5 kilowatts of payload power and carries 12 active extended Ku-band and 12 active extended C-band transponders. The spacecraft provides communications services to Mexico and its surrounding waters from the 114.9 degrees West Longitude orbital slot. In addition to the Mexsat Bicentenario spacecraft, Orbital ATK also provided the FSS ground segment, including the satellite command and control ground equipment and software as well as training and operational documentation.

The GEOSTAR™ Advantage

Orbital ATK's highly successful Geosynchronous Earth Orbit (GEO) communications satellites are based on the company's GEOSTAR spacecraft platform, which is able to accommodate all types of commercial communications payloads and is compatible with all major commercial launchers. The company's GEOSTAR product line includes the GEOSTAR-2 design, which is optimized for smaller satellite missions that can support up to 5.0 kilowatts of payload power. Orbital ATK has also developed the higher-power GEOSTAR-3 spacecraft design, delivering the next increment of payload power for applications between 5.0 and 8.0 kilowatts, allowing Orbital ATK to offer its innovative and reliable satellite design to the medium-class of communications satellites.

FACTS AT A GLANCE

Coverage:

Mexico and surrounding waters



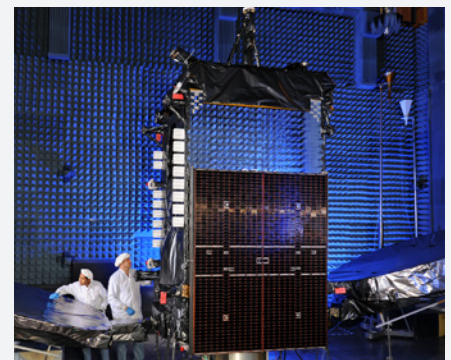
Mission:

C- and Ku-band FSS communications

Customers:

The Boeing Company (prime contractor)

Federal Government of Mexico, through the Ministry of Communications and Transports



Mexsat Bicentenario in Orbital ATK's Dulles, Virginia satellite manufacturing facility

Mexsat Bicentenario

Specifications

Spacecraft

Launch Mass:	2,900 kg (6,393 lb.)
Payload Power:	3.5 kW
Solar Arrays:	Three panels per array, UTJ Gallium Arsenide cells
Stabilization:	3-axis stabilized; zero momentum system
Propulsion:	Liquid bi-propellant transfer orbit system; monopropellant (hydrazine) on-orbit system
Batteries:	Li-Ion batteries
Mission Life:	≥15 years
Orbit:	114.9° West Longitude

Hybrid Payload

C-band

Repeater:	12 active extended C-band transponders
Antenna:	2.3 m dual grid deployable reflector

Ku-band

Repeater:	12 active extended Ku-band transponders
Antenna:	2.5 x 2.7 m single shell super-elliptical deployable reflector

Launch

Launch Vehicle:	Ariane 5
Site:	Kourou, French Guiana
Date:	December 19, 2012

Mission Partners

Federal Government of Mexico

Ministry of Communications and Transports

Orbital ATK

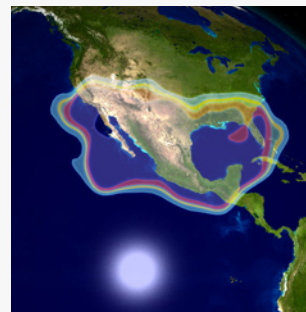
Design, integration and test of the Mexsat Bicentenario satellite and FSS ground segment

The Boeing Company

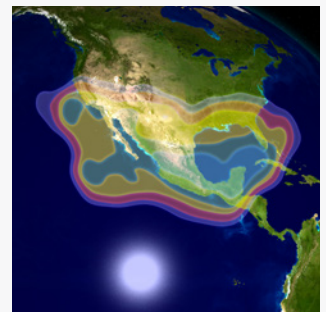
Prime contractor for the Mexsat satellite system; design, integration and test of the Mexsat Centenario and Mexsat Morelos 3 spacecraft

Coverage Contour Maps

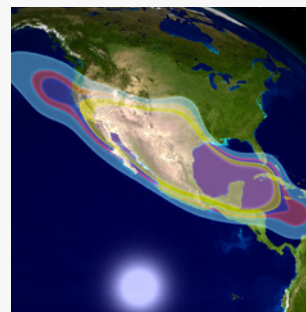
Ku-band Rx



Ku-band Tx



C-band Rx



C-band Tx

