SATEULITE RELATED SERVICES





Satellite Operations & Consulting

Reliability, Experience, and Resources for the Key Phases of the Satellite Lifecycle

Intelsat General's Satellite Related Services group provides in-orbit operations for more than 75 satellites owned by Intelsat and third-party companies. Our network connects to more than 550 ground antennas at 30 locations worldwide, offering long-term satellite monitoring and control for a variety of customers on one of the most sophisticated communications networks in the world.

Services Include

- Satellite procurement and oversight of construction
- Launch support services for your satellites
- Transfer Orbit Support Services (TOSS) when your satellite reaches space
- In Orbit Testing (IOT) of your new satellite
- Tracking, Telemetry & Control (TT&C) for the life of your satellite



Satellite Construction Oversight & Launch Management

Our engineers have years of experience in satellite procurement and spacecraft operations. The lessons they have learned directly benefit your programs. In addition, we leverage years of engineering know-how and deep experience with the major satellite manufacturers that result in the delivery of a more reliable spacecraft. We help you with:

- Early definition of satellite requirements
- RFP generation and evaluation
- Technical exhibits review and negotiation
- Proactive oversight of program at manufacturer's facility
- Additional technical support as needed
- Launch integration support



Benefits

- Seasoned monitoring services can help circumvent spacecraft and launcher issues with lessons learned from a broad spectrum of satellite manufacturing and acquisition experience
- Continuous presence and technical support induce contractor attention and discipline
- Improved schedule performance due to expedient resolution of issues
- Sustained technical continuity throughout program
- Insurers respect Intelsat's reputation for excellence and reflect this in premiums
- Higher product reliability, lower risk of failures, and longer service life due to rigorous construction monitoring



Transfer Orbit Support Services (TOSS)

Intelsat has a ground network of 19 Tracking, Telemetry and Command (TT&C) stations around the world to support customer satellite services. We make access to this network easy and convenient for you, with engineering and operations support to meet your specialized requirements.

- Site determination
- Rehearsal planning and execution
- Antenna licensing
- Hindrance coordination
- 24/7 global network of full-motion TT&C antennas that provide global coverage
 - 19 Intelsat and partner facilities worldwide
 - 31 active antennas (C, Ku, Ku-BSS, Ka)
 - Redundant data and voice communications at all sites
- Coordination and management of rehearsals
- Interference coordination



Benefits

- Provides optimal network for all of your satellite and launch vehicle mission planning scenarios
- One-stop shopping for your TT&C frequency requirements
- Capability to support up to three simultaneous
- Increased reliability and efficiency
- Reduced capital investment

Intelsat TT&C Ground Network Facilities Typical Antenna Specifications

C-band Full Performance Antennas

- 11-32m diameter
- Tx: 5850-6425 MHz / Rx: 3625-4200 MHz
- Polarization: Circular and Linear
- G/T: 31-41 dB/K
- Tracking: Monopulse and Programmable

- Ku-band Full Performance Antennas Ka-band Full Performance Antennas
 - 11-14m diameter
 - Tx: 13750-14500 MHz / Rx: 10950-12750 MHz
 - Polarization: Circular and Linear
 - G/T: >35 dB/K
 - Tracking: Monopulse and Programmable

- 8m-13.2m diameter
- Tx: 28350-30000 MHz / Rx: 18300-20200 Mhz
- Polarization: Circular and Linear
- G/T > 42 dB/K
- Tracking: Monopulse

19 Tracking, Telemetry and Command Stations



In-Orbit Testing (IOT) Services

You have access to the world's most extensive and secure commercial satellite communications network. We leverage our engineering expertise and ground infrastructure to provide you with extremely flexible in-orbit testing services.

- IOT slot identification
- Regulatory coordination
- Generation and execution of test plan
- Single site or simultaneous multiple-site IOT testing for reduced test time
- Automated measurement stations located around the world
 - Established equipment configured and tested
 - C, Ku, Ku-BSS, and Ka bands
- Portable in-orbit testing system can be easily installed at a customer-designated facility
- Network-only with no visibility into IOT data for customer anonymity
- Identification of IOT orbital location and coordination with adjacent operators



Benefits

- Shortened test time
- IOT Testing capability can be done remotely or on-site
- Less travel required



As an operator, Intelsat understands the importance of bringing your new satellites into service as quickly as possible. Our extensive engineering expertise and global IOT ground network provide an extraordinary amount of value to any IOT campaign, further securing healthy satellite operations.

Tracking, Telemetry & Control (TT&C)

We operate more than 75 Intelsat and third party spacecraft, including satellites from all major manufacturers. This experience assures the highest level of service and reliability for your FSS, DTH, and MSS service.

- Continuous satellite monitoring and control from redundant operations centers in McLean, VA, and Long Beach, CA
- Orbit determination, maneuver planning, propellant management, and end-of-life prediction
- Satellite health management, performance trending, anomaly resolution, payload management, and reconfiguration
- Hinder coordination
- Oversight of ground control system implementation
- Flexible solutions for GEO and other orbiting spacecraft (LEO, MEO, etc.)
 - Primary or back up on-orbit operations
 - Short term or early on-orbit operations
 - Lease of worldwide TT&C assets
- Training Programs for satellite operations

Intelsat has developed unique tools by combining third party and in-house ground control software products to create the most automated satellite control system in the industry. From the ground to LEO to MEO to GEO and everything else in between, we have a solution for your spacecraft operational requirements.

Benefits

- Economies of scale
- Fully redundant and back-up SOCs in McLean, VA and Long Beach, CA
- Assured reliability from experience with anomaly analysis and resolution, advanced control system, automation and rigorous fleet management process

Spacecraft Platforms Intelsat Operates

- Airbus E2000
- Airbus E3000
- Boeing 381
- Boeing 393
- Boeing 601
- Boeing 601HP
- Boeing 601MEO
- Boeing 702
- Boeing 702MP
- LM 7000
- OSC Star 2
- SSL 1300 Omega
- SSL FS1300
- Thales Spacebus 3000B



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