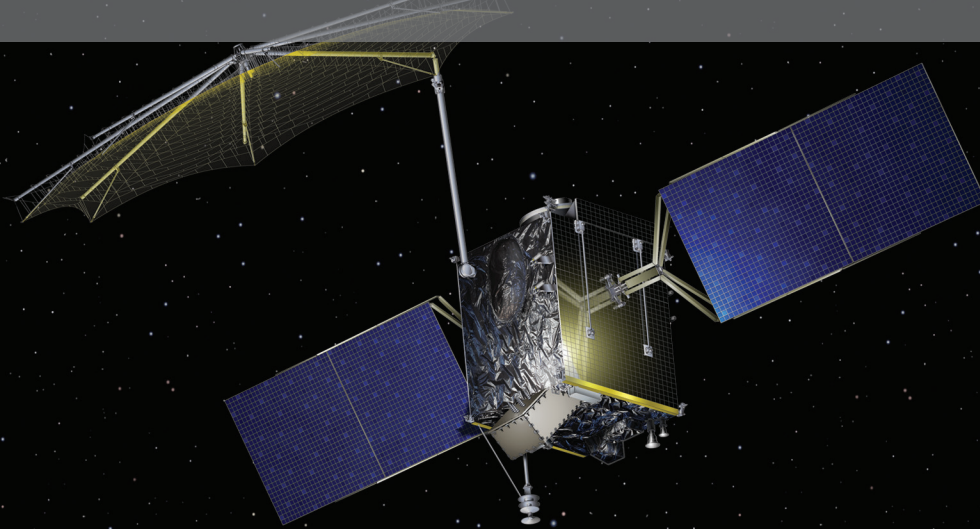




N-STAR c

S-band Commercial Communications Satellite



Mission Description

Built for NTT DoCoMo, N-STAR c is furthering NTT's vision of providing wireless service for a multitude of applications including mobile telephony, data transfer and maritime communications. N-STAR c provides an improved signal to users, allowing better voice quality and smaller mobile phones for the Japanese users.

N-STAR c operates in the S-band with a C-band feeder link. The satellite is located at 136 degrees East Longitude and was launched in early July 2002 on an Ariane 5 rocket. N-STAR c is optimized for a ten-year minimum life on-orbit, and is augmenting service provided by the company's existing satellites.

Lockheed Martin supplied the payload, which was integrated onto the Orbital GEOSTAR-2™ bus in Orbital's Dulles, Virginia facility. Final integration and test was performed at the Lockheed Martin Commercial Space Systems facilities in Newtown, Pennsylvania. In addition to the satellite bus, Orbital provided the ground system and procured the launch vehicle.

Spacecraft

N-STAR c is based on Orbital's highly successful Geosynchronous Earth Orbit (GEO) communications satellites which are able to accommodate all types of commercial communications payloads and are 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 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 to offer its innovative and reliable satellite design to the medium-class of communications satellites.

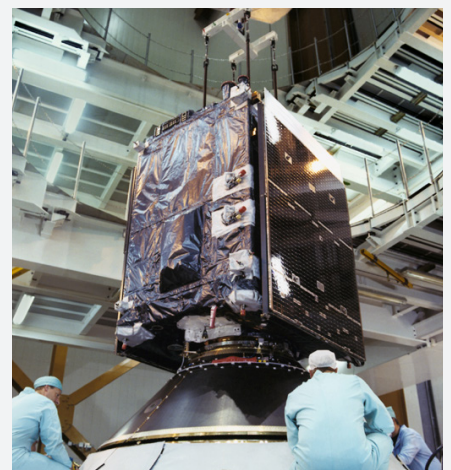
FACTS AT A GLANCE

Coverage:
Japan



Mission:
S-band mobile communications

Customer:
NTT Mobile Communications Network



N-STAR c mated to Ariane 5 prior to its July 5, 2002 launch

N-STAR c

Specifications

Spacecraft

Launch Mass:	1,625 kg (3,582 lb.)
Redundancy:	Typically 2-for-1, minimum
Solar Arrays:	Multi-junction Gallium Arsenide cells
Stabilization:	Zero momentum; 3-axis stabilized
Pointing:	<0.12° circular error
Payload Power:	~1.4 kW
Propulsion:	Liquid bi-propellant transfer orbit system; monopropellant (hydrazine) on-orbit
Mission Life:	10 year minimum, tank capacity for >12 years
Orbit:	136° East Longitude

Payload

Frequency:	S-band mobile communications, C-band feeder link
Repeater:	S-band: 288 W multipoint amplifier (three 5-for-4 groups of 24 W solid-state power amplifiers) C-band: 2-for-1 solid state power amplifiers (13 W)
Antenna:	5.1 m unfurlable

Launch

Launch Vehicle:	Ariane 5
Site:	Kourou, French Guiana
Date:	July 5, 2002

Mission Partners

NTT DoCoMo

NTT DoCoMo is Japan's premier mobile communications company, which provides wireless voice and data communications to tens of millions of subscribers. NTT DoCoMo is the creator of W-CDMA air interface technology, as well as the groundbreaking mobile i-mode service.

Orbital Sciences Corporation

Orbital provided the system design and was responsible for the assembly, integration and test of the spacecraft bus. Orbital also provided the ground station and procured the launch services.

Lockheed Martin Commercial Space Systems

Lockheed Martin, as the prime contractor, participated in integration and test, and provided the communications payload.

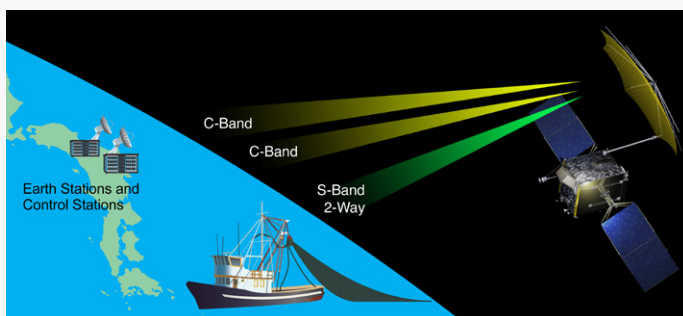
Arianespace

Launch provider



N-STAR c was launched aboard an Ariane 5 rocket.

N-STAR c Mission Profile



Orbital Sciences Corporation

45101 Warp Drive • Dulles, Virginia 20166 • www.orbital.com

©2014 Orbital Sciences Corporation FS013_01_2998