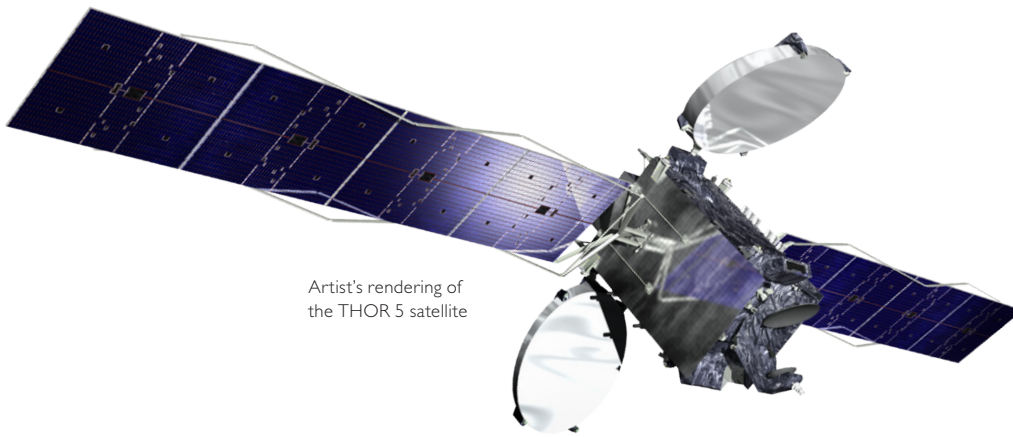




THOR 5

Ku-band FSS and BSS for Scandinavia, Europe and Middle East



Artist's rendering of the THOR 5 satellite

Mission Description

The THOR 5 satellite was developed and built for Telenor Satellite Broadcasting AS (TSBc) to provide broadcasting and interactive services to the Nordic countries, Europe and the Middle East. The Telenor THOR 5 spacecraft replaced the THOR II satellite at the 0.8 degrees West Longitude orbital position, and provides additional capacity, further expanding TSBc's business base.

THOR 5 provides regional Ku-band coverage for Fixed Satellite Service (FSS) and Broadcast Satellite Service (BSS). There are 15 active FSS transponders and nine active BSS transponders for fixed coverage regions. In addition, five more active BSS transponders are routed through a steerable antenna that can be pointed toward any other region on Earth visible from the 0.8 degrees West Longitude.

Spacecraft

Orbital GEO communications satellites are based on Orbital's GEOStar-2 spacecraft platform, lightweight geosynchronous buses that provide high reliability, performance and capacity in a relatively low-cost system. These platforms can accommodate up to 42 transponders, provide up to 7.5 kilowatts of payload power and operate over a 15-year life – ideal for telephony, data and broadcasting applications. GEOStar satellites are smaller and less costly to build and launch than those offered by the industry's traditional suppliers.

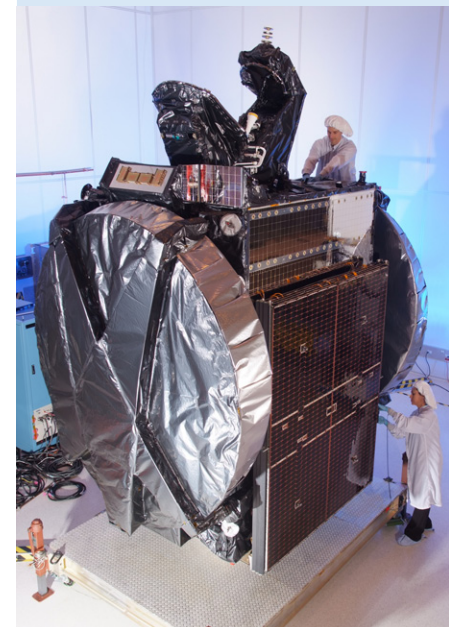
QUICK FACTS:



Coverage:
Scandinavia, Europe and the Middle East

Mission:
Ku-band Fixed Satellite Service (FSS) and Broadcast Satellite Service (BSS) for Scandinavia, Europe and the Middle East

Customer:
Telenor Satellite Broadcasting AS (TSBc) - Oslo, Norway



THOR 5 in Orbital's Satellite Manufacturing Facility prior to its February 2008 launch

THOR 5

Specifications

Spacecraft

Launch Mass:	1,960.4 kg (4,322 lb.)
Solar Arrays:	Four panels per array, UTJ Gallium Arsenide cells
Stabilization:	3-axis stabilized
Propulsion:	Monopropellant (hydrazine) on-orbit system
Batteries:	Two >4248 W-Hr capacity Li-Ion batteries
Mission Life:	15 years (fueled for >18 years)
Orbit:	0.8 degrees West Longitude

Payload

Frequency:	Ku-band
Repeater:	24 active transponders with 32-for-24 linearized TWTA's
TWTA Power:	55 W RF (FSS); 150 W RF (BSS)
Antenna:	Two 2.3 m dual gridded shaped deployable reflectors, one .75 m steerable antenna

Launch

Launch Vehicle:	Proton
Site:	Baikonur Cosmodrome, Kazakhstan
Date:	February 11, 2008

Coverage Contour Maps

Payload performance exceeds requirements over the full coverage areas.

T1 Beam EIRP Contours



T2 Beam EIRP Contours



T3 Beam EIRP Contours



Mission Partners

Telenor Satellite Broadcasting AS (TSBc)

100% owned by Telenor, Norway's largest telecom operator. Telenor Satellite Broadcasting is one of Europe's leading satellite operators.

Orbital Sciences Corporation

Prime contractor for the THOR 5 spacecraft

International Launch Services

Launch provider



THOR 5 was launched into orbit on a Proton launch vehicle