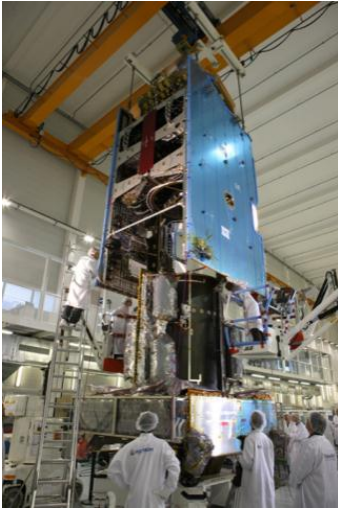


FACT SHEET



Alphasat: Expanding European capability

The Alphasat product line is Europe's response to market demand for increased broadcasting services. It accommodates missions with up to 22kW of payload power and mass up to 2 tons. As a high-power multi-purpose platform, it gives European industry an unprecedented and unique position in the global telecom market.

Cooperation

- Public: led by ESA and French space agency CNES
- Private: designed and built by a consortium of Astrium and Thales Alenia Space

Services

- Direct-to-home TV
- Digital audio broadcasting
- Broadband access
- Fixed and mobile services

Qualification flight

- On Ariane 5 in 2013
- Carrying Inmarsat's Alphasat mission

Implementation of the Alphasat geomobile application necessitates the adaptation of the nominal Alphasat platform design to allow a 90° rotation of the satellite flight orientation to accommodate the large antenna configuration. Both the satellite rotation and the accommodation of a large antenna are offered as options in the future Alphasat portfolio, demonstrating the flexibility of this platform.

Key features of Alphasat for Alphasat

- Alphasat Service Module in geomobile configuration, compatible with Ariane 5 and Proton 4 m-diameter fairing
- Repeater Module built in halves, for ease of payload accommodation
- Total launch mass: more than 6.5 tonnes
- Total electrical power: 12 kW.

Facts, figures and features

Nominal lifetime	15 years
Payload power	22 kW
Satellite mass	8.8 tonnes
Payload mass	2 tonnes
Typical payload capacity	230 transponders, equivalent to: <ul style="list-style-type: none">• more than 1000 television channels• more than 200 000 audio channels
Payload control data handling	1553 bus
Structure	<ul style="list-style-type: none">• Spin-formed carbon fibre central tube and additional carbon and aluminium panels• Cross section: 2800 x 2490 mm• Launcher Interface: 1666 mm
Modular concept	Antenna module for: <ul style="list-style-type: none">• Easier antenna accommodation• Efficient assembly and test
Attitude and orbit control	<ul style="list-style-type: none">• Gyros• Star and Sun sensors• Reaction wheels
Chemical propulsion	<ul style="list-style-type: none">• Apogee engine and 16 thrusters• 2 propellant tanks (with up to 4200 kg of bi-propellants)• Helium tanks (3 x 90 litres)
Electrical propulsion	<ul style="list-style-type: none">• Xenon tanks (max. 350 kg)• PPS 1350 thrusters on orientation mechanisms
Power generation and distribution	<ul style="list-style-type: none">• 2 gallium arsenide solar wings with 4–6 panels• Power supply and power distribution offering both 100 V and 50 V regulated buses• Modular lithium-ion battery

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