



# THE WORLD'S SPACEPORT

## Ideal location

The Guiana Space Center (CSG) offers ideal conditions for launching any payload to any orbit at any time. Located at 5 degrees North latitude, its proximity to the equator provides an extra boost of energy due to the Earth's rotation – a slingshot effect that is greater here than at most other launch sites.

## State-of-the-art facilities

The CSG provides modern Payload Preparation Facilities that are recognized for their high quality in the space industry. The facilities are capable of processing several spacecraft from different customers simultaneously, thanks to vast clean-rooms and commodious infrastructure. Designed to support the rockets' multiple launch capability and high launch tempo, the preparation facilities meet the needs of customers using any of the three vehicles in the Ariane family.

## Two Ariane 5 launch tables

Two Ariane 5 launch tables are in service, allowing dual vehicles to be prepared in parallel - providing unmatched mission flexibility for Arianespace.

## Strict security

The French government, the CSG, and Arianespace follow strict security measures that meet the most rigorous international and national agreements and requirements. They apply to the three launch systems: Ariane 5, Soyuz, and Vega, and strictly limit access to spacecraft. The security regimen is also compliant with US DOD requirements governing the export of US manufactured satellites or parts, and has been audited through a compliance survey by the U.S. government (e.g., within the framework of ITAR).

## Safety mission

The CSG applies strict Safety Rules during every launch campaign: this includes authorization of equipment use, operator certification, and permanent operation monitoring. Any potentially dangerous activity is to be reported to the CSG, which in turn, makes certain that safety equipment and emergency response teams are poised to deal with any hazard.

## Environmental protection

For many years, all CSG actors have been committed to protecting the environment, through strict measures during spacecraft preparation, launch, and flight. The impact of the launch vehicle in flight on the environment and the careful disposal of hazardous waste are carefully monitored.

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TECHNICAL OVERVIEW  
**ARIANE 5**

# ARIANE 5



The world heavy lift champion, Ariane 5, established new standards of reliability, availability and competitiveness.

Arianespace uses only two versions of the launcher, the Ariane 5 ECA and Ariane 5 ES, which ensures that their production is standard and availability is regular.

The Ariane 5 ECA can launch more than ten tons to geostationary transfer orbit and is the reference for the punctual delivery of satellites.

The Ariane 5 ES is best suited for missions to medium or low earth orbit, such as servicing the International Space Station or the deployment of the Galileo constellation.

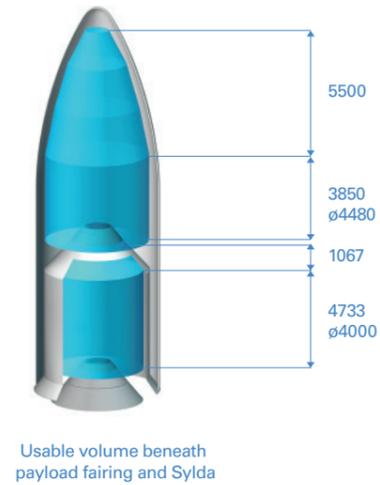
The Ariane 5 launcher consists of the Main Cryogenic Stage, two Solid Boosters and an Upper Stage. Using a limited number of engines, this architecture is both simple and robust.

With 74 successful launches in a row from 2003 to October 2016, the Ariane 5 has become the world's benchmark for heavy lift launch vehicles.

## Unsurpassed performance

The heavy lift capability of the launcher, the flexibility of its upper configuration, alongside Arianespace's proven multiple mission management ability, enables Ariane 5 to carry any type of spacecraft, from the smallest (1,000 kg or less) to the largest (20,000 kg), in either a dedicated or shared launch.

Performance	GTO	SSO	LEO	Elliptical L2 Lagrange	Moon Transfer
Payloads, kg (including adapters)	>10,000	>10,000	20,000	6,600	7,000
Inclination (i), deg	6	0	51.6	14	12
Altitude of perigee (Zp), km	250	800	260	320	300
Altitude of apogee (Za), km	35,943		260	1 300,000	385,600
Argument of perigee (Wp), deg	178			208	

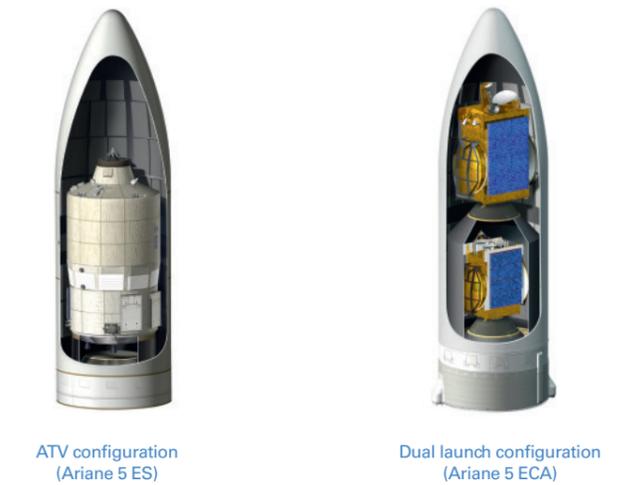


## Increased payload carrying capacity

The Ariane 5 fairing at 17-m high and with an external diameter of 5.4 m is exceptionally large for the commercial launch market. This enables Ariane 5 to launch all types of satellites now in service as well as those in development.

## Customized to any mission

The Ariane 5 launch vehicle provides standard interfaces that fit most spacecraft buses and satellites, allowing for the easy transfer or switch between any of the Arianespace family's launch vehicles. In addition to its world-reference dual launch system and multiple-separations platforms, various dedicated adapters or dispensers can be provided by Arianespace to address specific customer's needs and requirements.



## Back-up capabilities for 3-ton-class satellites

The advent of Soyuz launches at CSG provides additional capacity to adjust the launch offering for geostationary satellites. The Arianespace back-up policy allows the 3-ton-class satellites to be launched either on Ariane 5 on a dual launch configuration or on Soyuz as a dedicated launch. Therefore, Arianespace increases the flexibility of its offer and the added value for the customer.

## The fastest track to GTO

The typical duration of the GTO mission is between 25 and 35 minutes, depending on the separation phase events.

## Standard Ariane 5 mission profile for geostationary transfer orbit

