

July 2025
Launch kit
VV27



www.arianespace.com



www.avio.com

MISSION DESCRIPTION

Arianespace's third launch of 2025 will place its passengers CO3D (4 satellites) and MicroCarb in **Sun-synchronous orbit** (SSO), using a Vega C launcher. The launcher will be carrying a total payload of approximately 1.7 tons.

The launch will be carried out from Europe's Spaceport in Kourou, French Guiana.



DATE AND TIME

Liftoff is planned on July 25, 2025 at exactly:

- 22:03 Washington D.C. time,
- 23:03 Kourou time,
- 02:03 Universal time (UTC), July 26
- 04:03 Paris time, July 26
- 11:03 Tokyo time, July 26



MISSION DURATION

The nominal duration of the mission (from lift-off to separation of all the satellites) is: 1 hour and 41 minutes.

Separation of CO3D: 54 min

Separation of MicroCarb: 1h and 41 minutes



PASSENGERS

- **CO3D constellation** (comprising 4 satellites)
Customer: Airbus Defence and Space



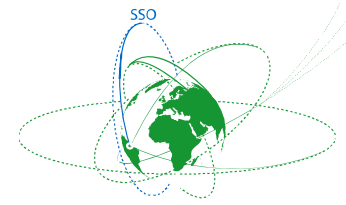
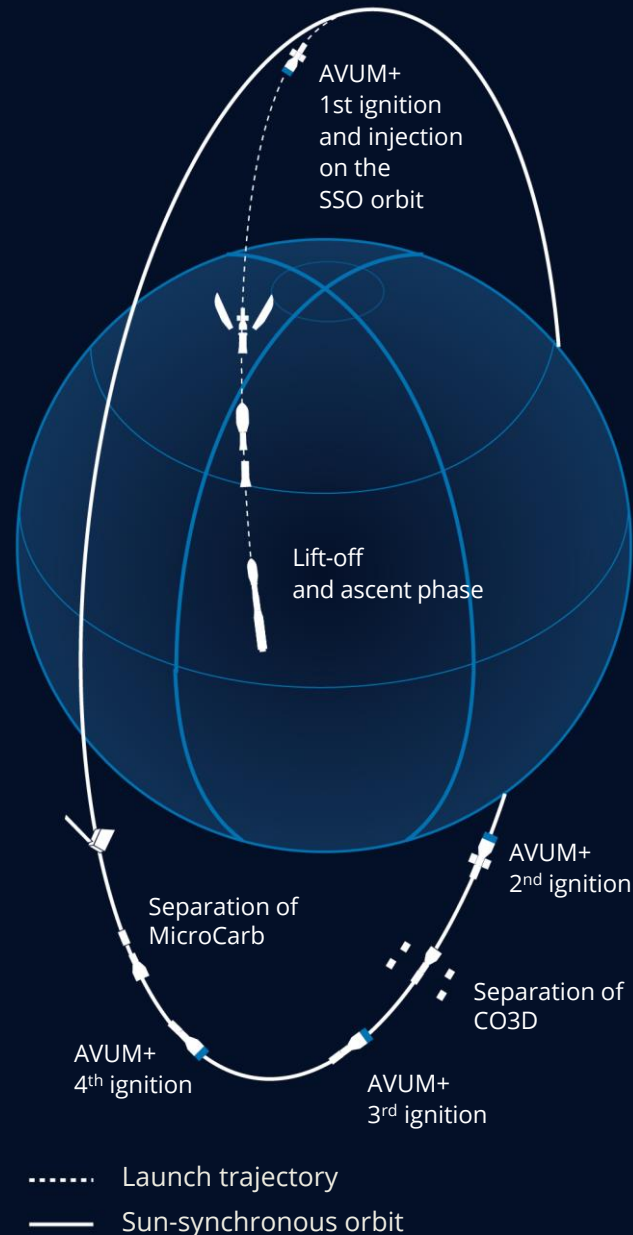
- **MicroCarb satellite**
Customer: CNES



TARGETED INJECTION ORBITS

- CO3D: 495 km
- MicroCarb: 650 km

STANDARD VEGA C SUN-SYNCHRONOUS ORBIT (SSO)



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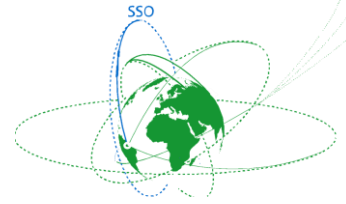
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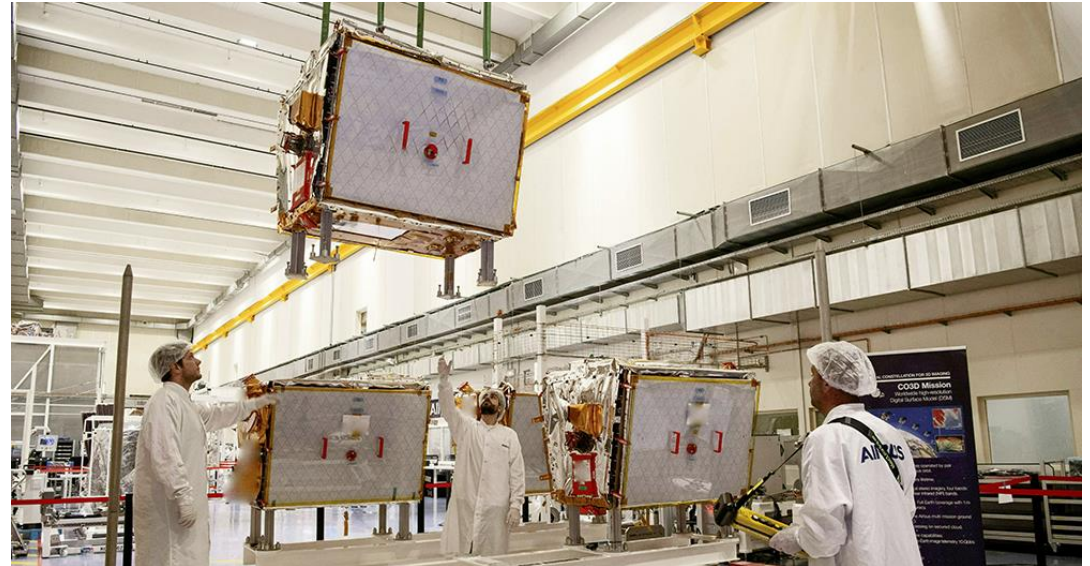


DID YOU KNOW?

A partnership between Airbus Defence and Space and CNES, the CO3D (Constellation Optique 3D) satellites will deliver a global high-resolution Digital Surface Model (DSM). The mission will provide 50 cm stereo imagery as well as high resolution imagery for government and commercial customers.

Built and owned by Airbus, CO3D comprises four dual-use satellites, each based on its all-electric S250 satellite product line.

The constellation is operated from an Airbus ground segment. CNES is in charge of the Image Calibration Centre based in Toulouse.



© Airbus Defence and Space, 2025

SATELLITES	CO3D, constellation of 4 satellites
CUSTOMER	Airbus/ Centre National d'Etudes Spatiales (CNES)
MANUFACTURER	Airbus
MISSION	Mapping the globe in 3D from a low Earth orbit Providing high resolution imagery capacity
MASS	Approximately 285 kg each
PRODUCT	S250 Optical
INSTRUMENT	Optical instrument with a spatial resolution of 50 cm in the visible red, green, blue and near infrared bands
COVERAGE AREA	Global
LIFETIME	Designed for 8 years

The data collected will feed a cloud-based ground segment developed by Airbus, including an image processing chain delivered by CNES. This data will answer military needs as well as civil applications, in particular for French Institutional partners. Concretely, this dual mission will benefit a wide range of uses such as:

- For the armed forces, it delivers the geospatial intelligence needed to operate in complex terrains.
- For urban planners, it offers a guide to safer, smarter cities.
- For scientists, it provides crucial data to study climate change.

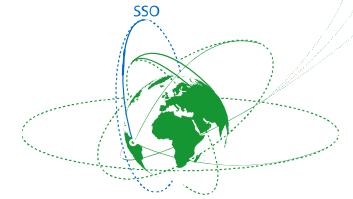


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The CO3Ds, as for subsequent S250 satellites, benefit from Airbus' strong experience in satellite constellation design, manufacturing and industrialisation. This innovative approach includes a design-to-build methodology to optimise satellite integration, the full digitalisation of operations and the set-up of a final assembly line to enable series production.

MICROCARB

Measuring global CO₂ distribution

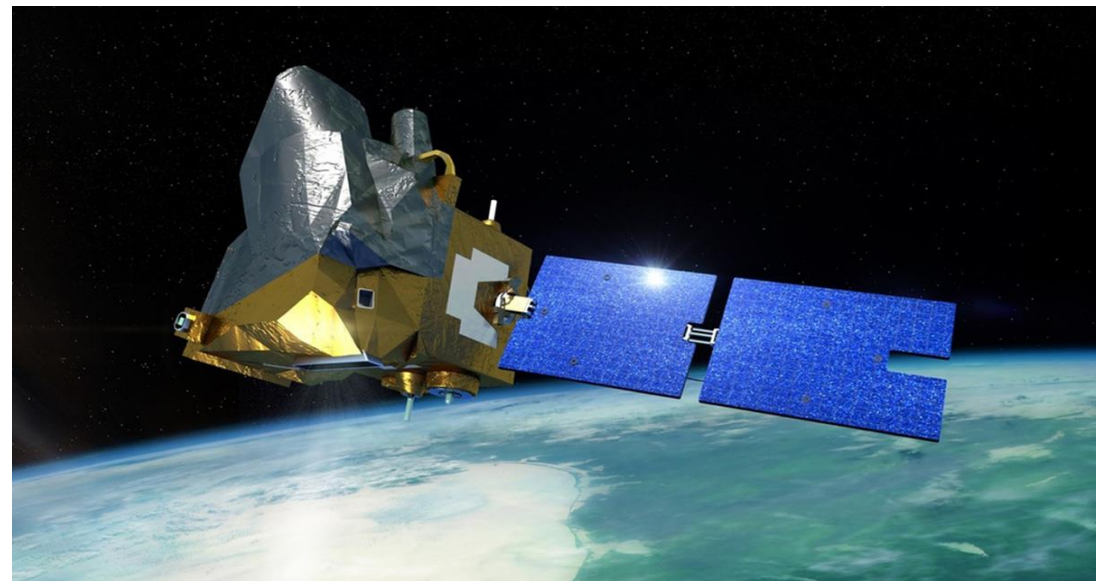


DID YOU KNOW?

The CNES' MicroCarb mission is designed to map sources and sinks of carbon dioxide (CO₂), the most important greenhouse gas, on a global scale. The mission's goal is to demonstrate the ability to measure atmospheric concentration CO₂ globally with a high degree of precision of 1 ppm, with a 80 kg compact dispersive spectrometer instrument. MicroCarb's platform is based out of the last copy of the CNES Myriade series.

Its instrument was built by Airbus Defence and Space (FR) under CNES direction, with the funding of the French government through the Future Investment Plan (PIA) managed by the National Research Agency (ANR). The satellite integration was realized by Thales Alenia Space UK through a dedicated partnership implemented with the UK Space Agency.

SATELLITE	MicroCarb
CUSTOMER	CNES
MANUFACTURERS	Thales Alenia Space (platform) Airbus Defence and Space (instrument)
MISSION	Measure global atmospheric CO ₂ distribution
MASS	180 kg
INSTRUMENT	Dispersive spectrometer
COVERAGE AREA	Global
LIFETIME	Designed for at least 5 years



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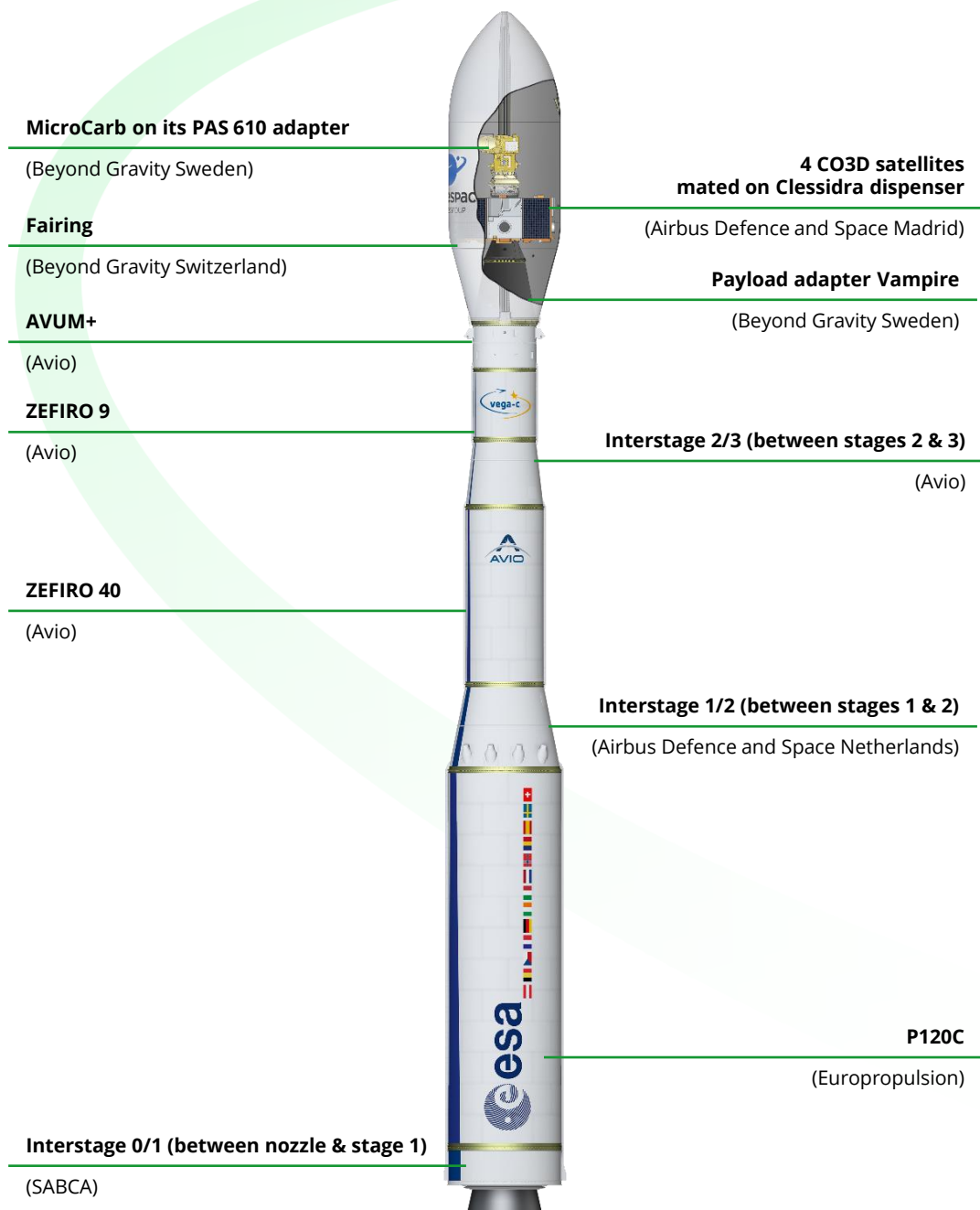
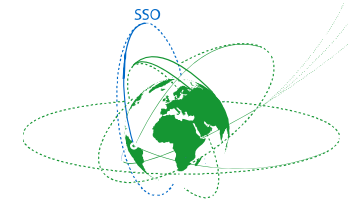
What are our planet's main carbon sinks: tropical rainforests or the oceans? How many tonnes of CO₂ are released by the world's cities, vegetation and oceans? As surprising as it may seem, we don't know exactly how much CO₂ is absorbed and released in certain parts of the world, due to a scarcity of ground-based measuring stations. Nor do we know how these amounts vary with the seasons. Yet this type of information is crucial for understanding the causes and consequences of climate warming, as CO₂ is the main human-induced greenhouse gas.

MicroCarb will be the first European CO₂ monitoring mission, paving the way to precisely define the natural and anthropogenic exchanges of CO₂ on a global scale.

CNES is responsible for mission performance as well as the ground segment. MicroCarb data will be freely accessible to the entire international scientific community thanks to the Data and Services [AERIS](#) from Data Terra, and through EUMETSAT for Copernicus service.

Co-funding from the French government, European Commission and UK Space Agency made the MicroCarb program possible.

VEGA C LAUNCHER



DID YOU KNOW?

The Vega C launcher has been upgraded with more powerful first and second stage solid rocket motors, bigger AVUM tanks and with a larger fairing that significantly increase payload mass (up to 2.350 tons in SSO – Sun-synchronous orbit) and double the allowable volume. The launcher also better meets the specific needs of small spacecraft, thanks to its improved SSMS (Small Spacecraft Mission Service) dispenser and to its AVUM+ motor that will allow for seven re-ignitions. Vega C can thus deliver its payloads on three different orbits on the same mission, instead of the two previously possible with Vega.

ESA is responsible for the Vega C launch system qualification and is the contracting authority for the development of Vega C, a programme carried out with participation of thirteen ESA Member States. Avio Spa (Colleferro, Italy) is the prime contractor and design authority of the Vega C launchers, delivering a ready to lift-off launcher to Arianespace, which will remain its operator up to Vega C Flight 29 (V29).



The **Clessidra dispenser** is a multiple dispenser capable of accommodating five satellites, with four of them located on the sides of the central tube and an additional satellite integrated at the top end of the dispenser. Its function is to hold the satellites during launch and separate them at the precise moment in orbit.

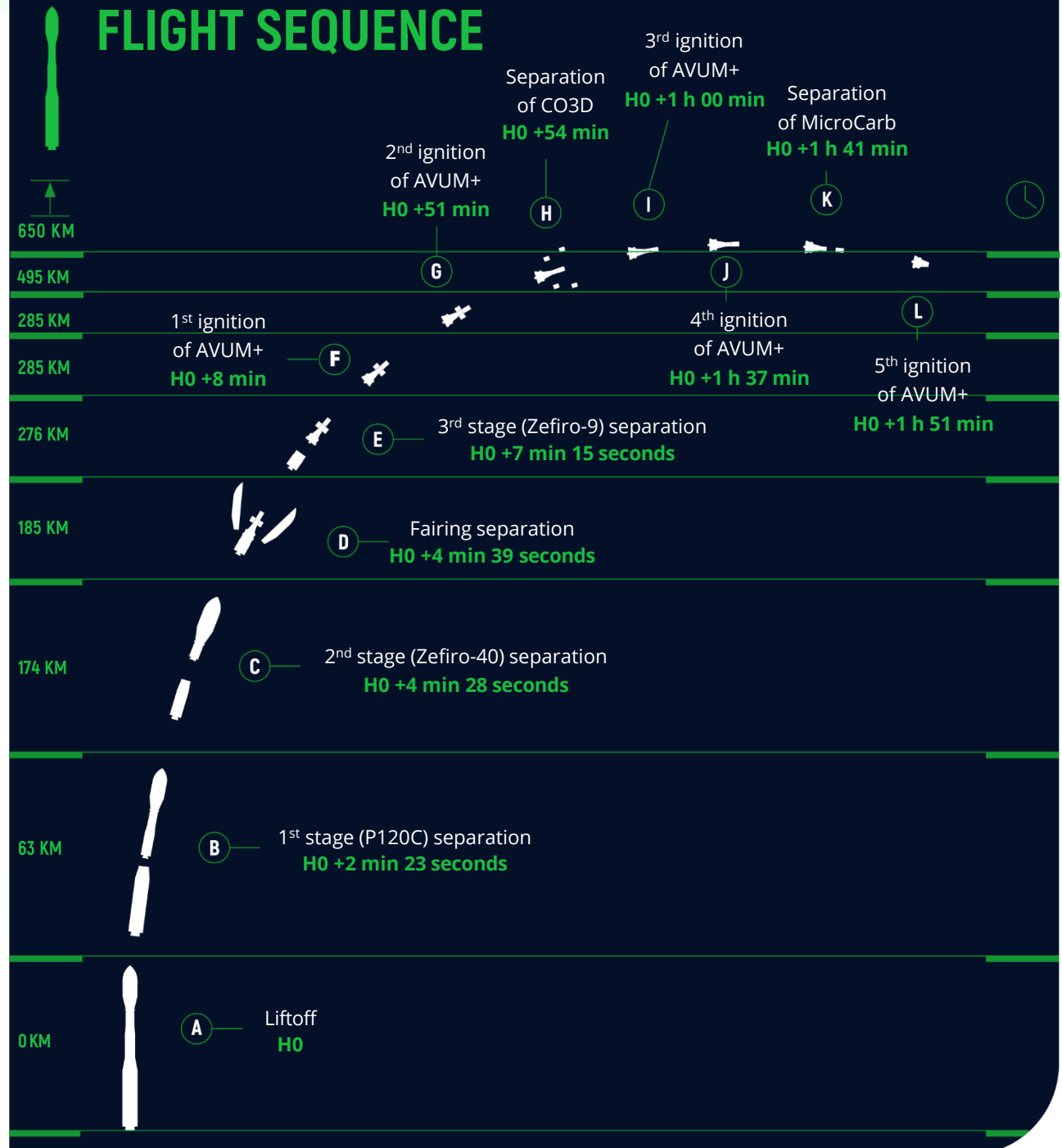
Clessidra incorporates some of the recent technological advancements developed by Airbus in Madrid, such as the Multi-point Separation Device (MSD) separation systems and the design of the composite central tube complex in a single piece using Automatic Fiber Placement technology.

LAUNCH CAMPAIGN

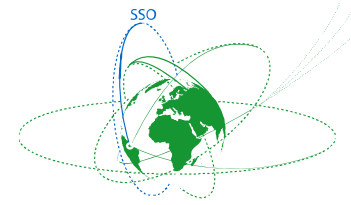
- 25/07/2025 Final launch countdown. Liftoff.
- 24/07/2025 Launch Readiness Review (LRR)
Final preparation of launcher and final inspection of the fairing
- 18/07/2025 - 19/07/2025 Transfer of upper composite to launch pad and integration onto Vega C launcher
- 15/07/2025 Encapsulation of passengers under fairing
- 10/07/2025 MicroCarb mating on payload adapters
- 27/06/2025 - 01/07/2025 CO3D satellites assembly on Clessidra dispenser
- 26/06/2025 Arrival of CO3D satellite in French Guiana.
Unloading and transfer to payload preparation facilities
- 21/06/2025 Arrival of MicroCarb satellite in French Guiana.
Unloading and transfer to payload preparation facilities
- 02/06/2025 Campaign start

— Satellite operations — Launcher operations

FLIGHT SEQUENCE



LAUNCH STAKEHOLDERS



ARIANESPACE

Arianespace uses Space to make life better on Earth by providing launch services for all types of satellites into all orbits, since 1980. Arianespace is responsible for operating the new-generation Ariane 6 launcher, developed by ESA, with ArianeGroup as the prime industrial contractor. Arianespace will also operate the Vega C launches up until mission VV29, point at which Avio will become the sole operator and launch service provider of Vega.

Arianespace is headquartered in Les Mureaux, near Paris, and has a technical facility at the Guiana Space Center in French Guiana, plus local offices in Washington, D.C., Tokyo and Singapore. Arianespace is a subsidiary of ArianeGroup, which holds 74% of its share capital, with the balance held by 15 other shareholders from the Ariane and Vega European launcher industry, and ESA and CNES as censors

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AVIO

Avio is a leading international group engaged in the design, development, and operations of space launch systems as well as solid, liquid and cryogenic propulsion systems for civil and military applications.

The experience and know-how built up over more than 50 years puts Avio at the cutting-edge of the space launch sector and defense programs.

Avio is present in Italy, France, United States and French Guyana, employing approximately 1,500 highly qualified personnel.

Avio is the future Launch Service Provider for the Vega C launcher (as of VV30) and a sub-contractor for the Ariane program, placing Italy among the limited number of countries capable of designing, producing, and operating a complete space launch system.

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CNES

CNES (Centre National d'Études Spatiales) is the government agency responsible for shaping France's space policy and implementing it in Europe. Its task is to conceive and orbit satellites, invent the space systems of the future and nurture new services to aid us in our daily lives. Founded in 1961, it is the initiator of major space projects, launch vehicles and satellites, and the partner of choice for industry fuelling innovation. CNES comprises some 2,400 men and women with a passion for space working to open up new and infinite fields of applications in five core areas of focus: Ariane, science, Earth observation, telecommunications and defence.

The agency is a key player driving technology innovation, economic development and industrial policy for the nation. It also fosters scientific collaborations and has forged numerous international partnerships. France, represented by CNES, is one of the leading contributors to the European Space Agency (ESA).

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ESA

ESA guides the development of Europe's space capabilities and makes sure that space contributes to a safer, more prosperous and sustainable future for its citizens. As an international organisation with 23 Member States, ESA coordinates its members' financial and intellectual resources to undertake ambitious programmes and initiatives that largely surpass the scope of action of a single European state.

ESA oversees the development of Europe's current and future space transportation services and solutions, including Ariane 6, Vega-C, Vega-E, Space Rider, and of technologies for transport in-, to-, and from-space, notably through the Future Launchers Preparatory Programme. On Ariane and Vega, ESA manages the overall programmes while European industry builds the launch vehicles with ArianeGroup (Ariane 6) and Avio (Vega-C and -E) as prime contractors and design authorities. ESA also fosters commercial space transportation services under private lead through initiatives like Boost! and the European Launcher Challenge. ESA Member States fund about two-thirds of the total cost of running and maintaining Europe's Spaceport in French Guiana.

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