



LAUNCH KIT

APRIL 2026



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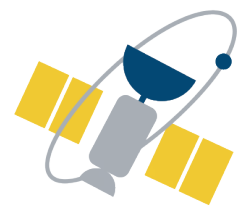
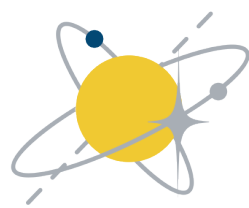
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MISSION DESCRIPTION

Avio's first launch of 2026 will place its passenger Smile (Solar wind Magnetosphere Ionosphere Link Explorer) into **circular Low Earth Orbit around Earth**, using a Vega C launcher.

The launcher will be carrying a total payload of 2,250 kg.

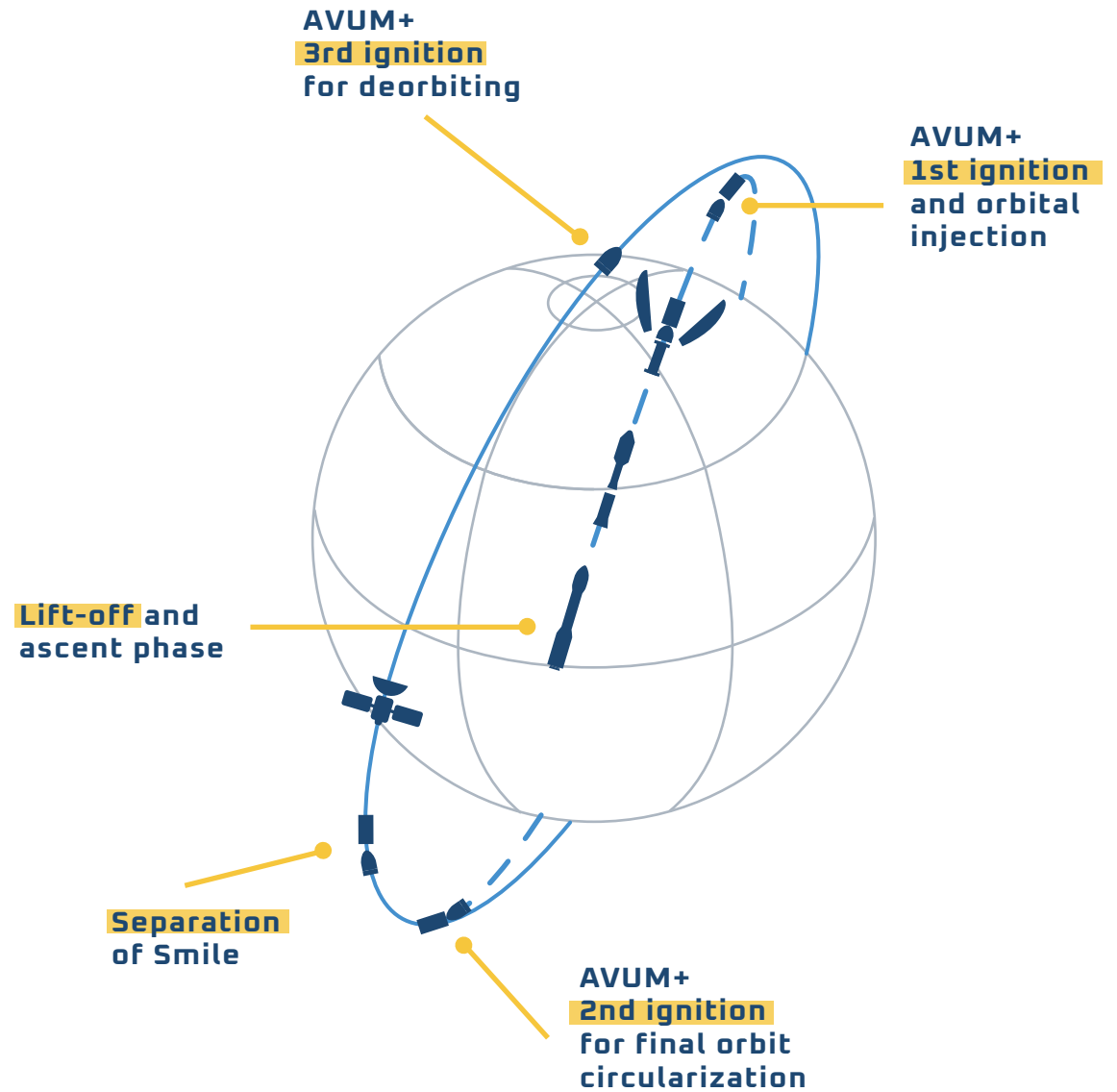
The launch will be carried out from **Europe's Spaceport in French Guiana**.

<u>Date and Time</u>	<u>Mission Duration</u>	<u>Satellite</u>	<u>Target Orbit</u>
 <p>Lift-off is planned on April 9, 2026 at:</p> <p>03:29:30 am – French Guiana time 06:29:30 am – Universal time (UTC) 08:29:30 am – Italy time 02:29:30 pm – China Standard time (CST)</p>	 <p>The nominal duration of the launch (from lift-off to separation of the satellite) is: 57 min.</p>	 <p>Satellite: Smile Customers: European Space Agency (ESA) and Chinese Academy of Sciences (CAS)</p>	 <p>The satellite will be released into a circular orbit at an altitude of 706 km with an inclination of 70°. It will then perform an orbital transfer with its own propulsion system to reach a High Elliptical orbit (HEO) with an apogee of approximately 121,000 km and a perigee of 5,000 km.</p>

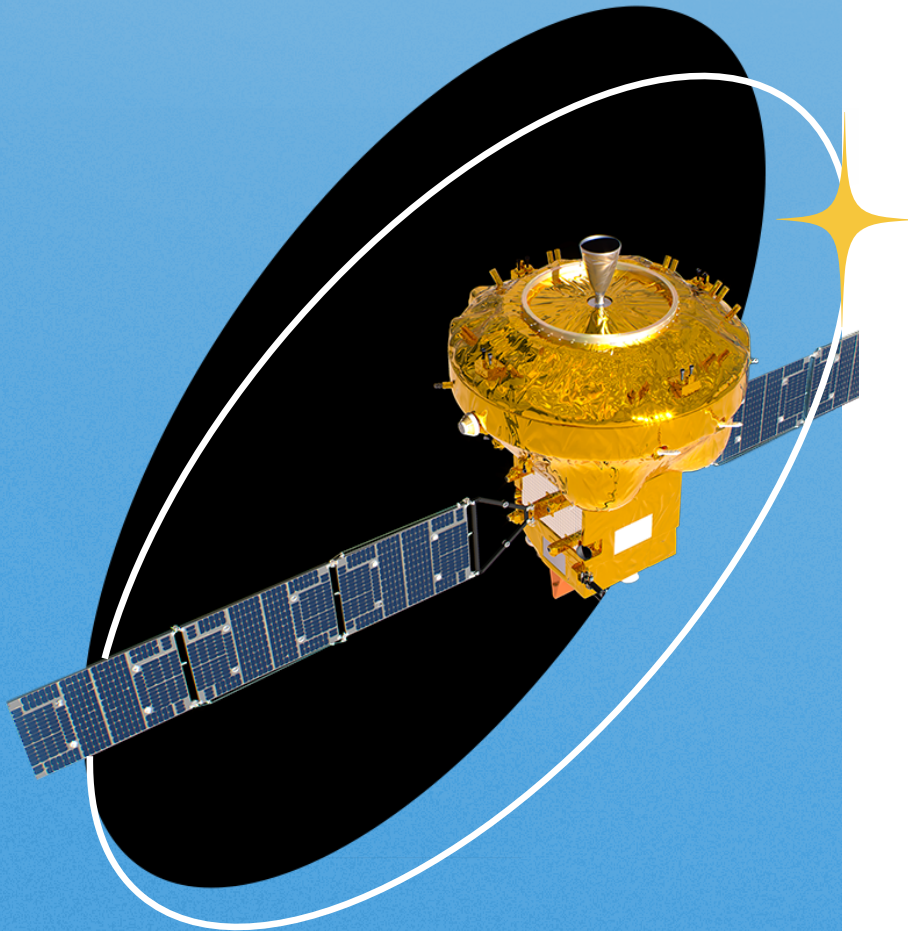
STANDARD VEGA C CIRCULAR ORBIT

LEGEND

- - - Launch trajectory
- Circular orbit



MEET SMILE



The Smile mission (Solar wind Magnetosphere Ionosphere Link Explorer) is a major scientific collaboration between the European Space Agency (ESA) and the National Space Science Centre (NSSC) of the Chinese Academy of Sciences (CAS). This project marks an **important milestone in international cooperation**, as it is the first ESA–China partnership of this scale and nature.

Smile is designed to **advance our understanding of the interactions** between the solar wind and Earth’s magnetosphere—phenomena that are critical for studying space weather and its impact on our planet. The mission builds on a legacy of **joint scientific efforts**, following projects such as Double Star in 2004 and Einstein Probe in 2024. Smile takes this collaboration further and **stands out for its scope and complexity**.

The mission is implemented within ESA’s Science Directorate, underscoring its **strong focus on research and innovation**. Smile is not only a significant step forward in space science but also a **tangible example of how international collaboration** can open new frontiers for studying the space environment and protecting technological infrastructure on Earth.

SMILE TECHNICAL DETAILS

Manufacturers

- **Chinese Academy of Sciences** (CAS) (platform)
 - **Airbus Defence and Space** (Payload Module)
-

Launch mass

2,250 kg

Orbit

Highly elliptical, with apogee at **121,000 km** and perigee at **5,000 km**, period of approximately **51 hours**

Scientific instruments

- **SXI** (Soft X-ray Imager): maps regions of interaction between the solar wind and Earth's magnetosphere, including the magnetopause
 - **UVI** (Ultraviolet Imager): observes the auroras for up to 45 hours at a time
 - **LIA** (Light Ion Analyser): collects and analyses solar wind particles
 - **MAG** (Magnetometer): measures the strength and direction of magnetic fields around the spacecraft
-

Coverage Area

Global coverage of Earth's magnetic environment

Lifetime

Smile is designed to operate for at least three years to achieve its **science goals**

VEGA C LAUNCHER

DID YOU KNOW?

Vega C is Avio's launch vehicle designed to send small and medium-size satellites, mostly into Low Earth Orbit (LEO). It offers enhanced mission flexibility and significantly improved performance compared to Vega, its predecessor, enabling Europe to maintain autonomous access to space. With increased payload capacity and a larger fairing, Vega C supports a wide range of institutional, commercial, and scientific missions.

The rocket consists of four stages:

- **P120C first stage**, a powerful solid-propellant motor delivering a major thrust increase;
- **Zefiro-40 second stage**, a solid-propellant motor providing stronger intermediate propulsion;
- **Zefiro-9 third stage**, inherited from Vega and burning 10,000 kg of solid propellant;
- **AVUM+ upper stage**, equipped with a re-ignitable liquid engine enabling up to seven re-ignitions, precise orbital placement, and deorbiting at the end of the mission. With this capability, Vega C can deliver payloads to three different orbits on the same mission.

The Vega C launcher can carry up to **2,300 kg** to a **700-km** sun-synchronous orbit (SSO), offering about **50% more capacity than Vega**. The **payload fairing (3.3 m diameter, >9 m height)** allows transport of multiple satellites of various shapes and sizes, including smallsat constellations through the SSMS (Small Spacecraft Mission Service) set of adapters.

With the approval of the 2025 **Launcher Exploitation Declaration (LED)**, Avio formally assumes the roles of launch system operator and launch service provider for upcoming missions of the Vega family of launchers.

ESA is responsible for the Vega C launch system qualification and is the contracting authority for the development of Vega C.

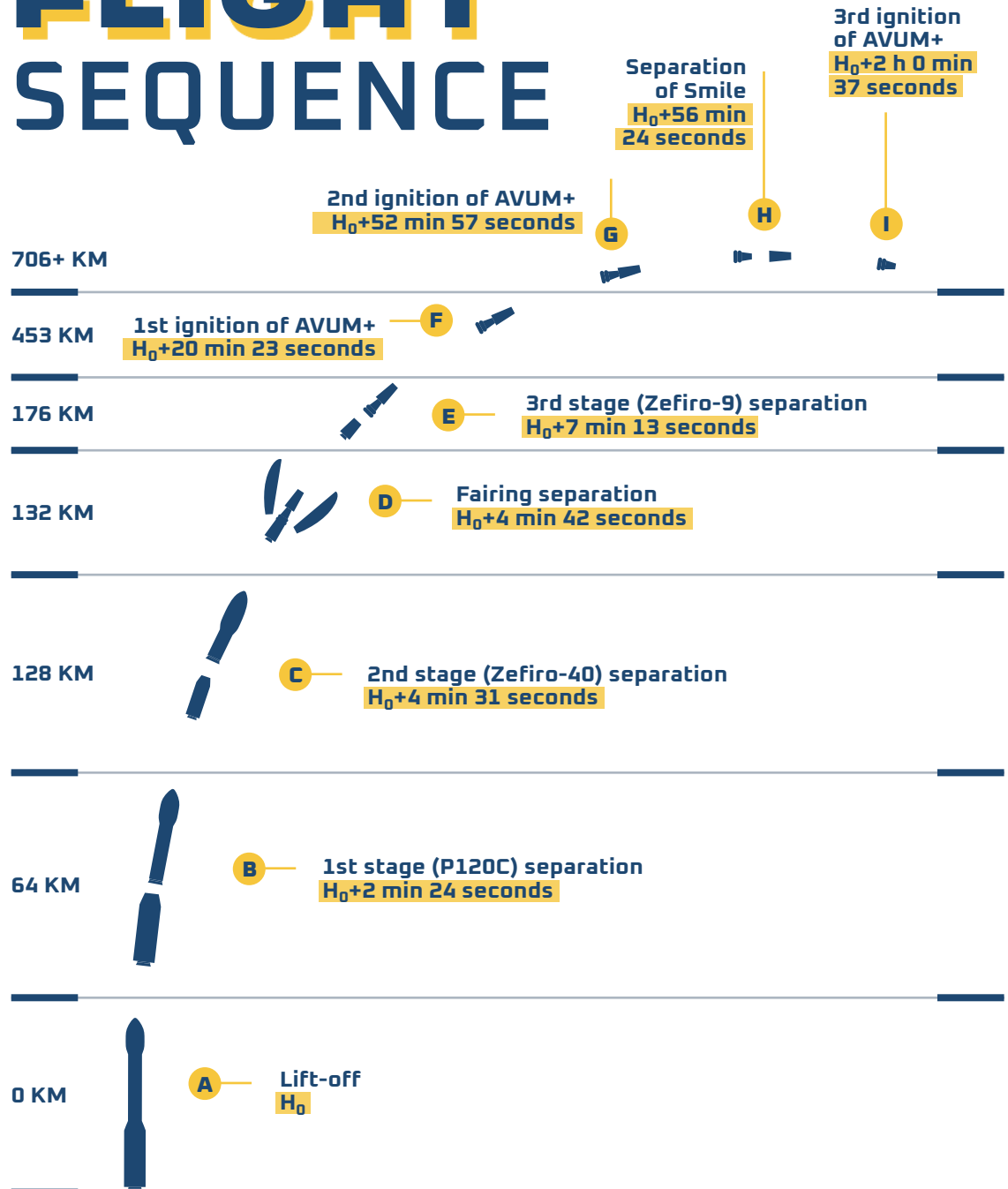
Avio is the prime contractor, the design authority, the launch service provider and launch system operator for the Vega C VV29 flight.



LAUNCH CAMPAIGN

09-04-2026	Lift-off
08-04-2026	Final launch countdown begins
07-04-2026	Launch Readiness Review (LRR) - Final preparation of launcher and final inspection of the fairing
31-03-2026	Integration of Payload Assembly Composite onto Vega C launcher
30-03-2026	Transfer of Payload Assembly Composite to Vega C launch pad
26-03-2026	Smile encapsulation under fairing
25-03-2026	Smile mating on payload adapter
18-03-2026	Fuelling of Smile
26-02-2026	Smile arrives in French Guiana Satellite unpacking and transfer to payload preparation facilities on Europe's Spaceport
19-02-2026	Launcher campaign start

FLIGHT SEQUENCE



LAUNCH PARTNERS

AVIO

Avio is a **leading international group** engaged in the **manufacturing and development** of space launchers and solid, liquid and cryogenic propulsion systems. The experience and know-how built up over **more than 50 years** puts Avio at the cutting-edge of the space launcher sector and defense program. Avio is present in **Italy, France, United States and French Guiana**, employing more than 1,500 highly qualified personnel. Avio is the **prime contractor, launch service provider and launch operator** for the Vega program and a sub-contractor for the Ariane program, as well as a leading solid rocket motor subcontractor for the design and manufacturing of **major European tactical missile programs**.



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CNES

CNES (Centre National d'Etudes Spatiales) is the **public establishment responsible for proposing French space policy to the Government and implementing it in Europe**. It designs and puts satellites in orbit and invents the space systems of tomorrow; it promotes the emergence of new services that are useful in everyday life. CNES, created in 1961, initiates major space projects, launchers and satellites and is the natural partner of industry for pushing innovation. CNES has nearly **2,400 employees**, men and women who are passionate about space, which opens up infinite, innovative fields of application; it intervenes in **five areas**: the Ariane launcher, scientific research, observation, telecommunications and defence. CNES is a **major player in technological innovation, economic development and industrial policy in France**. It also establishes scientific partnerships and is involved in numerous international projects. France, represented by CNES, is one of the main 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 Ariane Group (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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