

 **DASSAULT
AVIATION**




vortex



Dassault Aviation is committed to a resolutely dual roadmap, with the development of a family of Vortex® spaceplanes, strategic instruments serving the autonomy and sovereignty of France and Europe, but also the competitiveness and sustainability of the European space economy.

The **Vortex®** business model is based on a public-private partnership structured around complementary areas of focus.

- A multi-mission dual-use platform meeting a wide range of needs
- A business plan combining institutional and commercial markets to ensure a solid economic foundation
- An industrial consortium bringing together leaders in the European space sector, under French leadership
- Strong institutional support, motivated by European space sovereignty, making risks acceptable and strengthening the program's credibility with private players, whether customers or investors

The first step is Vortex-D, a reduce-scale demonstrator, supported by the French Defense Procurement Agency (DGA).

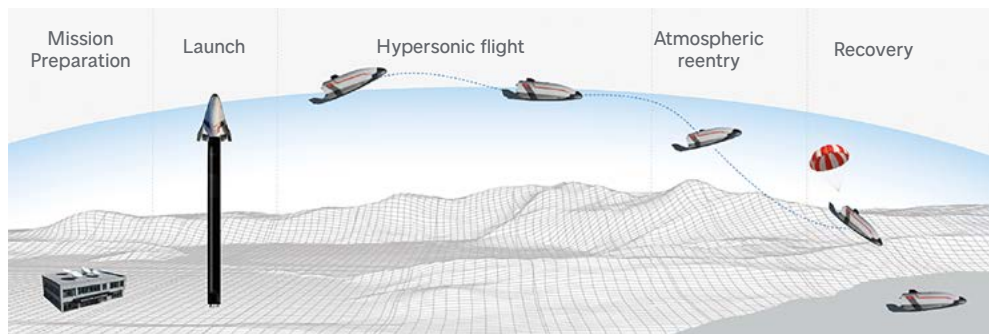
The **Vortex-D** demonstration flight is scheduled in **2028**. The flight will be suborbital with a hypersonic atmospheric reentry (Mach 10+).



Objectives

- ✓ Validation of the aerodynamic design
- ✓ Validation of hypersonic technologies, including flight controls
- ✓ Validation of off-fairing launch

Demonstration flight of Vortex-D in 2028



Vortex-S

Dual-use operational spaceplane

Vortex-S will succeed to the **Vortex-D** demonstrator. This spaceplane will give start-ups and large companies access to a unique microgravity environment, offering huge potential for research and production in many fields.

Vortex-S will offer cargo transport capabilities to future private space stations (Commercial Low-Earth Orbit Destinations) or act as a sovereign and autonomous space station. Its characteristics also make it an ideal tool for experimenting and validating orbital technologies in the civil and military sectors.

Missions

- Experimentations and manufacturing in orbit (pharmaceutics, crystal growth, biotechnologies, advanced materials)
- Cargo transport to space stations
- In-Orbit Servicing (maintenance, refueling)
- Objects recuperation
- Payloads and satellites releases
- New space technologies experiments
- Defence

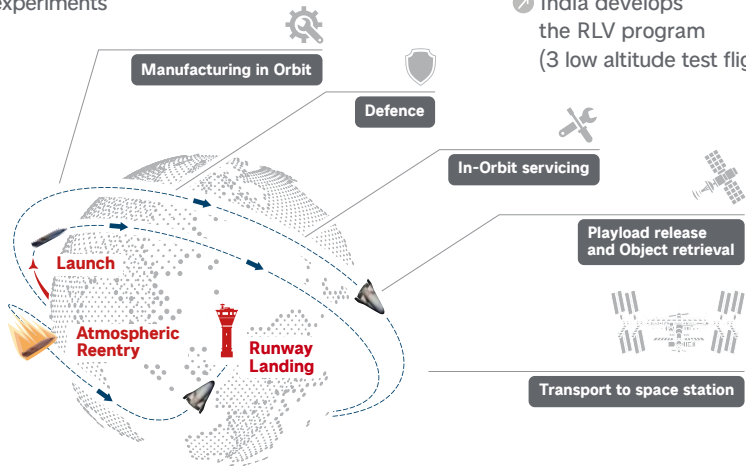
Key points

- + Dual : new civil and defence capabilities
- + Atmospheric agility and in orbit mobility
- + Soft atmospheric reentry, ideal for fragile payloads
- + Reusable
- + Large bay : 8 m³/280 ft³, 2 metric tons of payload
- + Lands on a runway, like a plane, close to the customer's base

Strategic

- A sovereignty asset for defence and the next industrial revolution
- An European Consortium program
- A solution to the post-ISS uncertainty
- The United States of America operate the X-37B since 2010 (7 missions)
- China flies a reusable spaceplane since 2020 (3 missions)
- India develops the RLV program (3 low altitude test flights)

Mission trajectory Vortex-S



Vortex-H

The Vortex roadmap includes a future larger Human-rated evolution enabling a sovereign and independent human spaceflight capability for Europe.





Vortex[®]

A strategic asset for power
projection and innovation



<https://vortex.space>