

**A major step forward for the European reentry vehicle road map
Thales Alenia Space and Avio sign with European Space Agency
the Space Rider development contract**

Space Rider is Europe's next-generation reusable transportation system for low Earth orbit

Rome, December 9, 2020 – Thales Alenia Space (Thales 67 %, Leonardo 33 %), and AVIO as co-contractor, signed a contract with the European Space Agency (ESA) for the development of the automated reusable Space Rider transportation system, designed for deployment by the new Vega C light launcher into low Earth orbit (LEO). The total worth of the contract is 167M€ .

Space Rider is Europe's solution for its own affordable and reusable end-to-end integrated space transportation system for unmanned missions and for routine access and return from low orbit. It will be used to transport a variety of payloads into different low Earth orbit (LEO) altitudes and inclinations.

Designed as a free-flying orbital platform, Space Rider is capable of remaining two months in orbit, safely re-entering the atmosphere and landing on the ground with a precision of 150 metres. It can be recovered along with its payload, refurbished, and reused for up to six missions.

Leading a consortium of European manufacturers, research centers and universities, Thales Alenia Space is responsible for the development of the reentry module (RM), the most challenging of the project derived from the IXV, experimental space shuttle made in Italy with the strong support from the Italian space agency ASI and tested in 2015. AVIO is in charge of the propulsions system and the expandable service module. Space Rider will be launched into space aboard the Vega C launcher, developed by AVIO for the European Space Agency.

“Space Rider will pave the way for Europe to a more accessible and agile use of Space in Low Orbit and the contract signed today demonstrates once more Thales Alenia Space's leading role in atmospheric reentry systems, since it combines the capabilities of orbital free-flying satellite platforms with reusability, and marks a crucial step of great technological value for European space industry” – said Massimo Claudio Comparini Senior Executive Vice President Observation, Exploration and Navigation at Thales Alenia Space. “It will confirm that Thales Alenia Space is mastering all the technologies needed to further explore the Moon, Mars, and beyond in the Universe, and that the company is now ready to extend its expertise to future applications for point-to-point flights, spaceplanes, and even space tourism. This leadership starting from our Turin facility combined with the strong and decisive support of the Italian institutions, places the country at the forefront of the space economy and will boost the huge development opportunities offered by the space domain”.

More about the mission

Planned to be launch on 2023 by Vega C light launcher from the Guiana Space Center, Space Rider system overall length is 9.7m; it records 2430 kg wet mass and can accommodate up to 600kg of payload inside a 1.2 cubic meter cargo bay. The re-entry vehicle will reach Mach 28 speed at 90 km of altitude, and sustain maximum temperature of 1700K at the nose heat stagnation; subsonic parachute will open at 16 Km altitude at around 0.73 Mach decelerating the vehicle down to 50 m/s; final part of the descent is under parafoil which has the function of energy management and aero brake (flare maneuver) to limit the landing run after touch down.

ABOUT THALES ALENIA SPACE

Drawing on over 40 years of experience and a unique combination of skills, expertise and cultures, Thales Alenia Space delivers cost-effective solutions for telecommunications, navigation, Earth observation, environmental management, exploration, science and orbital infrastructures. Governments and private industry alike count on Thales Alenia Space to design satellite-based systems that provide anytime, anywhere connections and positioning, monitor our planet, enhance management of its resources, and explore our Solar System and beyond. Thales Alenia Space sees space as a new horizon, helping to build a better, more sustainable life on Earth. A joint venture between Thales (67%) and Leonardo (33%), Thales Alenia Space also teams up with Telespazio to form the parent companies' Space Alliance, which offers a complete range of services. Thales Alenia Space posted consolidated revenues of approximately 2.15 billion euros in 2019 and has around 7,700 employees in nine countries. www.thalesaleniaspace.com

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About Avio

Avio S.p.A. Avio is a leading international group engaged in the construction and development of space launchers and solid and liquid propulsion systems for space travel. The experience and know-how built up over more than 50 years puts Avio at the cutting-edge of the space launcher sector, solid, liquid and cryogenic propulsion and tactical propulsion. Avio operates in Italy, France and French Guyana with 5 facilities, employing approx. 1,000 highly-qualified personnel, of which approx. 30% involved in research and development. Avio is a prime contractor for the Vega programme and a sub-contractor for the Ariane programme, both financed by the European Space Agency ("ESA"), placing Italy among the limited number of countries capable of producing a complete spacecraft.

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