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AVIO ESSENTIALS

- >**50 YEARS** IN SPACE LAUNCHES
- **>1,200** EMPLOYEES
- **25%** OF EMPLOYEES IN R&D ACTIVITIES
- **>350 MLN €** REVENUES IN 2022
- **VEGA PRIME CONTRACTOR** - ESA'S LIGHT LAUNCHER
- **ARIANE PARTNER** - ESA'S HEAVY LAUNCHER
- LISTED ON THE **EURONEXT STAR** SEGMENT OF THE ITALIAN STOCK EXCHANGE SINCE 2017

EUROPE'S LEADING SPACE LAUNCHER MANUFACTURER

Avio is a leading international group in the field of space launchers, propulsion and transportation. It has 5 sites in Italy, France and French Guyana and employs more than 1,200 people.

Avio is listed on the Milan stock exchange in the Euronext Star segment. In 2022, its revenues totaled more than €350 million.

With the Vega family of launchers, manufactured by Avio, Italy is part of a small group of countries that are able of building a complete space launcher.

Avio currently builds the Vega C launcher, capable of lifting up to 2,300 kg into Low Earth orbit.

The new SSMS adapter can carry dozens of microsatellites into orbit with one single launch.

The first-stage solid propulsion engine used on Vega C - the P120C - is manufactured by Avio in Italy and later integrated at the Europropulsion (J.V. 50% Avio, 50% ArianeGroup) facilities in French Guyana. The same engine is also used in the side boosters of the European Ariane 6 launcher, in the two Ariane 6.2 and Ariane 6.4 configurations.

The second stage of the Vega C launcher uses the new Zefiro 40 engine, made of a new carbon fiber composite material that is pre-impregnated and tested by Avio at its plant in Colleferro.

The Avio group is now working on the evolution of Vega C: the Vega E launcher, based on a three-stage configuration and a new generation of "green" propellants that offer greater versatility.

In the field of satellites, the Avio Group has manufactured and supplied ESA (the European Space Agency) and ASI (the Italian Space Agency) with propulsion subsystems to put into orbit and control more than 30 satellites, including the most recent Small GEO.

IFD
LOX-CH
In Flight
Demonstrator

SSMS

LOX-CH
Engine
M60

NOWADAYS

Vega C Ariane 62 Ariane 64

2025

Space
Rider

2026

Vega E M10

2026

DEMONSTRATORS

2030

Vega
Next Gen

THE NEW LAUNCHERS AND GREEN PROPULSION

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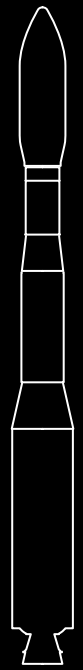
VEGA C



- **35 M** HEIGHT
- **190 TON** MASS
- MULTIPLE TRANSPORT OF PAYLOADS UP TO **2,300 KG**

Vega C (Consolidation) is the evolution of the Vega launcher. It consists of three stages based on solid propulsion engines and one stage based on a liquid propulsion engine. Its maiden flight took place on July 13, 2022.

With Vega C, the payload capacity at the same reference orbit has increased from 1,500 kg to 2,300 kg.

This new generation of launchers takes full advantage of the capabilities of the new Small Spacecraft Mission Service (SSMS) payload adapter to carry dozens of microsatellites into Low Earth Orbit. The launcher was chosen for the first launch of the European Space Rider experimental spacecraft, as well as for the Clearspace-1 mission to remove space debris.

Thanks to its space module system, Vega C is more flexible and versatile than its predecessor, increasing the potential market for this vehicle from 50% to 90% of LEO satellites, a substantial part of which can be managed by taking advantage of its multiple launch capability.

Competitiveness, Versatility and Efficiency are the characteristics that make Vega C a benchmark in the light launcher industry.

VEGA E

The Vega E - in the initial stages of technological development - from 2026 will be the 'school bus' for small satellites.

Thanks to its innovative three-stage architecture with a revolutionary liquid oxygen and methane engine for the upper stage, it will be able to release multiple satellites into different orbits during a single mission, at an even more competitive cost and maintaining the same reliability and precision standards of the Vega family.

The Vega family of launchers, as well as the Ariane 6 engines, share the use of the innovative Filament Winding process (a technology that relies on the "winding" of carbon filaments in the production of solid-propellant booster engines), which makes the Colleferro plant a worldwide center of excellence.

M10

The M10 is a green engine that will reduce the environmental impact of launch activities and pave the way for a new generation of launchers. The aim is to increase the competitiveness of the European small launcher family, taking full advantage of the technologies and infrastructure developed for the Vega and Vega C launchers. The M10 is a 10-ton class cryogenic (methane and liquid oxygen) engine and will be the upper stage of the Vega E launcher.

Developed with PNRR (the Italian Recovery and Resilience Plan) funds under the "Economia in Orbita" project, it will involve many Italian leading companies and experts from the aerospace sector and academia in its development phase.

WHAT'S NEXT

Avio has been working on Satellite Propulsion for more than 50 years, from its first satellites - such as Sicral, Artemis and Italsat-1 & 2 - to the more recent Small Geo and EDRS.

ESA PARTNER IN THE HERA PROJECT

ESA's Hera mission will launch in 2024 and will be conducted in synergy with NASA's Double Asteroid Redirect Test (DART) mission. Hera and DART aim to explore and modify the trajectory of a dual asteroid system (Dydimos).

"We are proud to participate in this important ESA mission, which recognizes the value of Avio's skills and technologies and propels it into the future of space defense."

Giulio Ranzo | Avio CEO

Giulio Ranzo

CHIEF EXECUTIVE OFFICER

He graduated with honors in Civil Engineering from Sapienza University in Rome. In 1993 he obtained a PhD in Structural Engineering through a joint program between the University of Rome and the University of San Diego in California (UCSD).

CEO of Avio S.p.A. since October 2015, he began his career at Booz Allen Hamilton where he was a strategic consultant in the Aerospace and Defense Global Practice. Founder of In-Orbit SpA in 2017, he led the listing of Avio on the Milan Stock Exchange.

He is the author of several scientific papers in the field of structural engineering.

2000

He starts his career at Booz Allen Hamilton, a global strategy consulting firm; from 2000 to 2007 he holds increasingly important positions as Associate, Senior Associate and Principal.

2007

From 2007 to 2011, he is Co-General Manager and CFO of the Italian operations of Cementir Holding, an international group operating in the building materials industry.

2011

From April 2011 to October 2015, he serves as Senior Vice President Corporate Strategy of Avio Group.

2013

In 2013 he works on the sale of the aviation business to the US General Electric group.

2014

Between 2014 and 2015, he contributes to the integration between the divested businesses and GE Aviation.

2015

In October, he is appointed CEO of Avio S.p.A. He also becomes a member of the boards of Arianespace SA, Europropulsion SA and Regulus SA in France.

2016

In 2016, he founds In-Orbit SpA, a Special Purpose Vehicle in which he invests together with 70 Avio managers to acquire a 4% stake in the company.

2017

In 2017, he leads the listing of Avio on the Milan Stock Exchange, in the Euronext Star segment, with a 70% free float.

2020

In 2020, he creates the first Oxygen and Methane Engine Testing Center in Sardinia, Italy.

2022

In July 2022 he sees the inaugural launch of Vega C.

2023

He is reappointed CEO for the 2023-2025 three-year period. Thanks to his leadership, the company's workforce has increased from 800 to 1,200 employees.

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