



THE EUROPEAN GATEWAY TO SPACE

Cowen 41st Annual Aerospace/Defense & Industrials Conference

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Giulio Ranzo - CEO

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Avio: a pure player in Space launchers





European heavy launcher (10.5 tons in GTO) **Avio: Strap-on boosters**





European light launcher (1.5 tons in LEO) **Avio: System integrator**

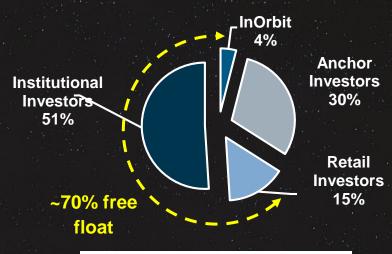
A public company managed by a team of investors





Milan Stock Exchange
Ticker: AVIO.MI – ISIN: IT0005119810

Avio shareholders' breakdown





4% share in Avio 70 Avio managers

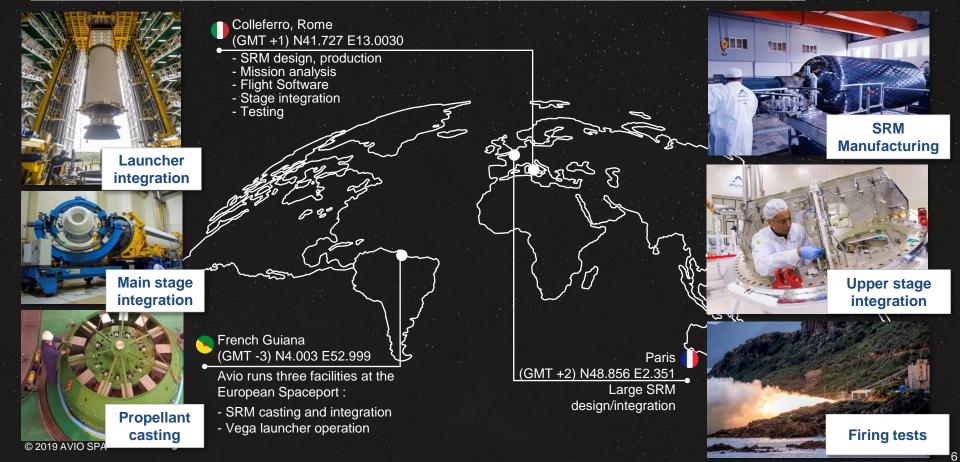
50 years of track record in Space launch



Vega Ariane 1-3 Ariane 4 **Ariane 5** Vega Space Vega E light Rider 9.5 ton Vega C Ariane 6 230 ton **Ammunitions** Separation launch boosters motors boosters system 1912 1968 1990 2003 2012 2020 2025

Industrial operations in Europe and French Guyana





The launch segment: the gateway to the Space economy



Global space value chain (2018)

x% = 2015-18 CAGR

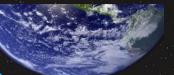












Launch^(1,2) \$ 6.2bn +5%

Satellites \$ 19.5bn +7%

Ground⁽³⁾ \$ 125.2bn +6%

Services (2,4) \$ 126.5bn stable

End users

Government \$ 82.5bn



ULM





BOEING

Source: Satellite Industry Association (2018)



























HSBC (X)



Goldman Sachs











Telespazio







:. iridium

EØSAT

plànet.





Earth Observation and Connectivity services drive demand growth



Application

Example

End Users



ICEYE



- Investors & financial analysts (Quant, Commodity)
- Intelligence analysts
- Customs & Border agents







- Farmers
- Insurance companies
- Meteorological agencies
- · Civil Protection agencies







- Defense
- Intelligence agencies
- Rescue operations



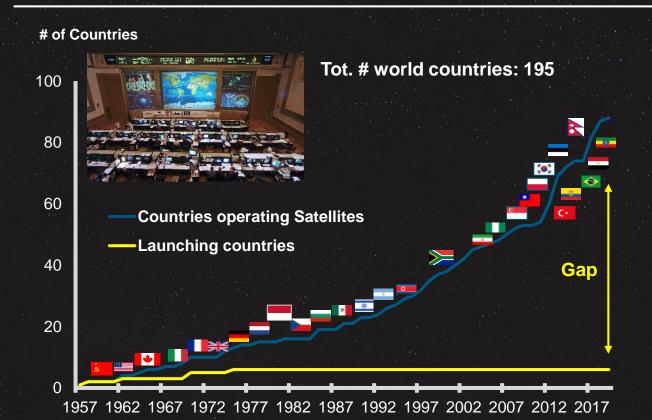




- Investors & financial analysts (Quant, Commodity)
- Insurance companies

Increasing gap between launch demand and supply



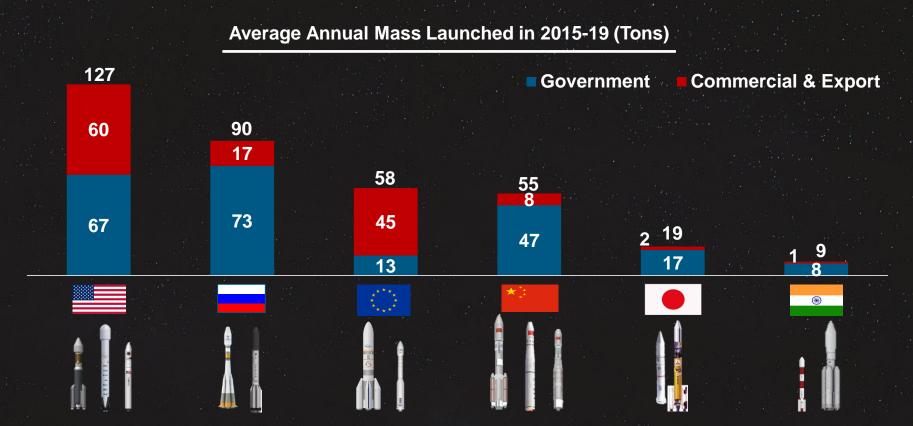




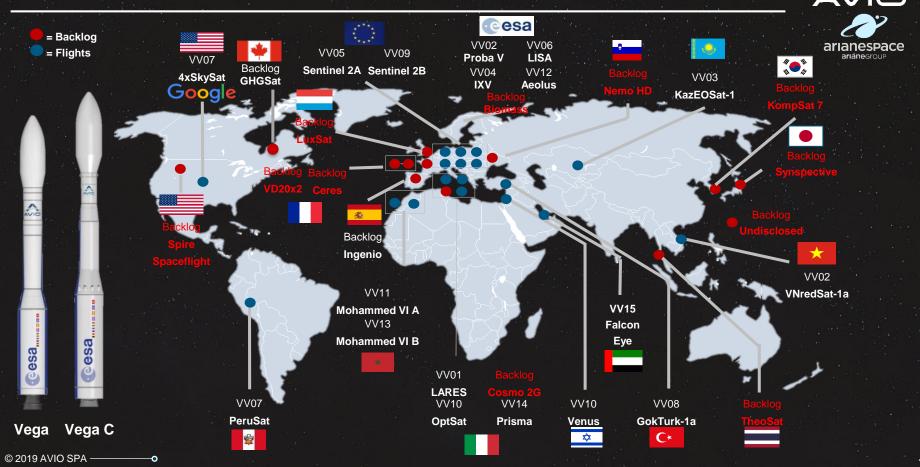
Source: Web Search; United Nations

Launch capabilities highly concentrated. Export mostly from Europe and USA



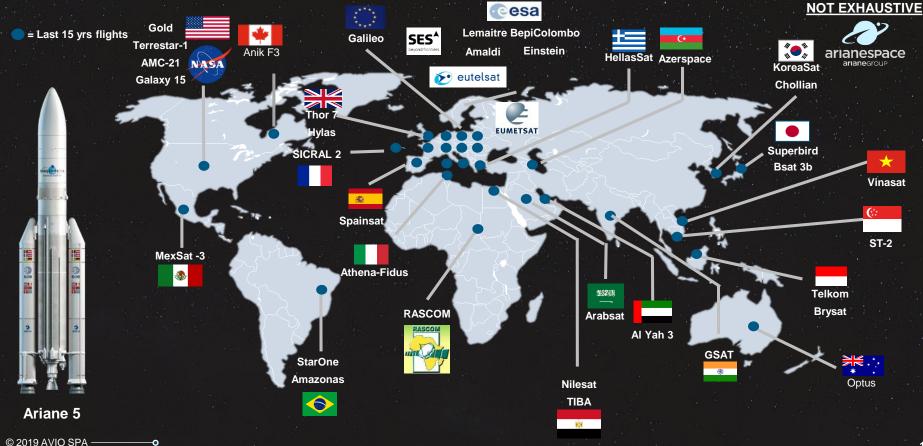


Vega: global customer base for LEO launch



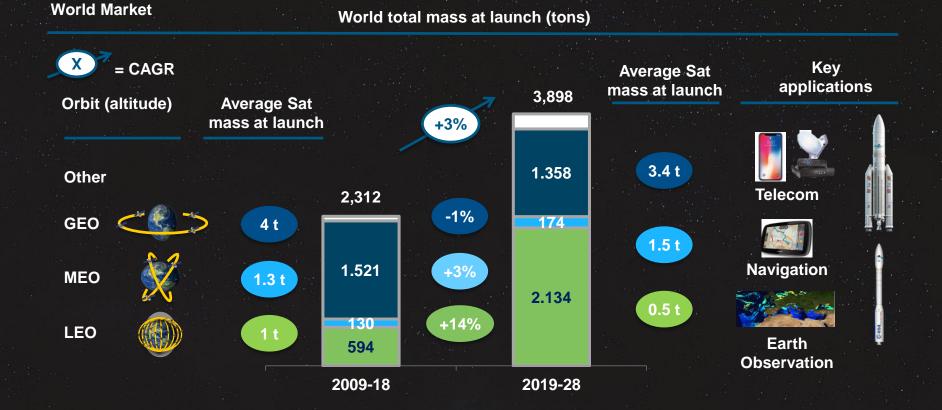
Ariane: global customer base for GEO launch





Launch demand stable in MEO-GEO, fast-growing in LEO





European Launch capabilities evolving to meet demand





Capacity **Reference Orbit**



1,5 t LEO

2,3 t LEO

6 t **GTO**

11 t **GTO**

0,3 t **LEO**

0,8 t

LEO





















TODAY

Ariane 5 Vega

Vega C

2020

2020/21

Ariane 62 Ariane 64

2022

Vega light

2022

Space Rider

2025

Vega E



Automation and standardization, cost reduction







Average satellite mass shrinking quickly







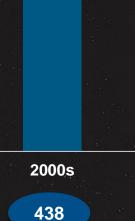


of Sats launched



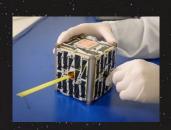
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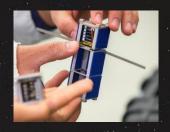






1,7





>5,000

0,7

E 2020s

Source: Avio estimate on Euroconsult and UCS data, For 2020s includes also OneWeb and Starlink

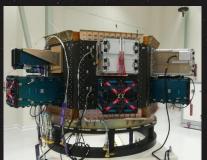
SSMS: the Avio breakthrough solution for smallsats



SSMS Integration completed

1st Vega SSMS flight - fully booked with 44 Satellites





actEarth **ESAIL** Ship Spire Internet of tracking/ surveillance things SPACEFLIGHT Earth Observation **GHGSAT** Measure greenhouse emissions SSMS Orbit validation TSIS-

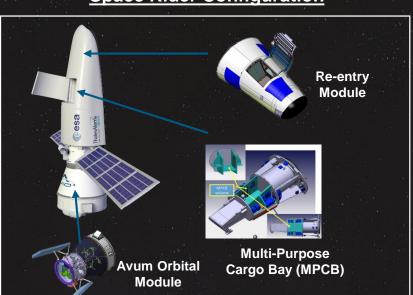
Maximum flexibility for rideshare missions, allowing multiple satellite releases in many orbits with different altitudes and changes of inclination

planet.

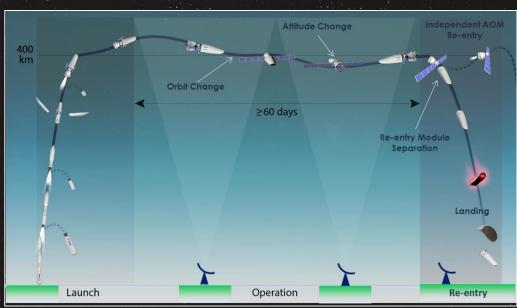
Space Rider: orbital and re-entry vehicle



Space Rider Configuration



Typical Mission Profile



- Provides highly customizable recoverable and reusable orbital space laboratory for
- Microgravity, Earth Observation, Science, Research, Robotic exploitation
- Launched on Vega-C ranging from equatorial to SSO orbits
- Performs in-orbit PL operations, de-orbits, re-enters, lands and re-flies after limited refurbishment

Overview of Galileo and Copernicus programs





Navigation

- **GNSS (Global Navigation** Satellite System) civil system
- 26 operating satellites + 4 spares
- **Positioning: MEO Orbit**
- Satellite mass: 675 kg
- 6 launches for Ariane 6.2 already contracted



Earth Observation



- **Earth Observation costellation** of the European Union
- **Positioning: SSO Orbit**
- Satellite mass: 1,000<->2,000 kg
- 20 further Sentinel satellites expected to be launched in orbit by 2030

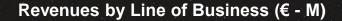
Ariane 6

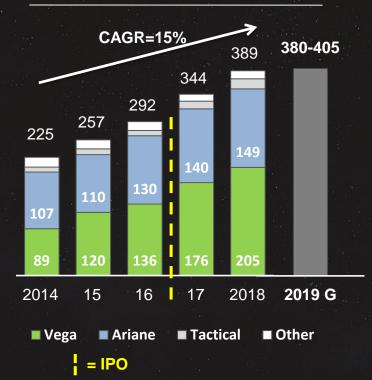
Vega C

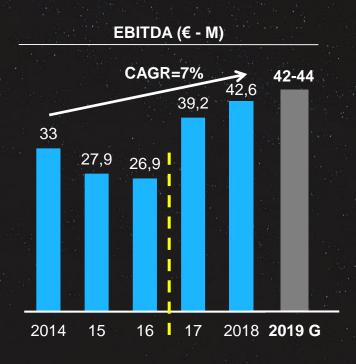
Additional funding expected of €16 Bn by the European Union in the 2021-27 Budget to support Galileo and Copernicus

Growing Revenues and EBITDA



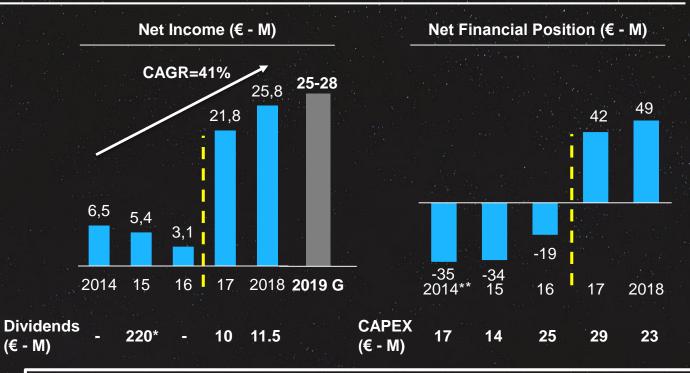






Growing Earnings and Cash supporting dividends and capex





Share buyback program launched in August (max €9M) to offer additional shareholder return along with dividends and use cash generation for medium-long term investment



^{*} Extraordinary dividend

^{**} Pro-forma to account for extraordinary dividend financing

Avio stock price vs Consensus Target Price and Benchmarks

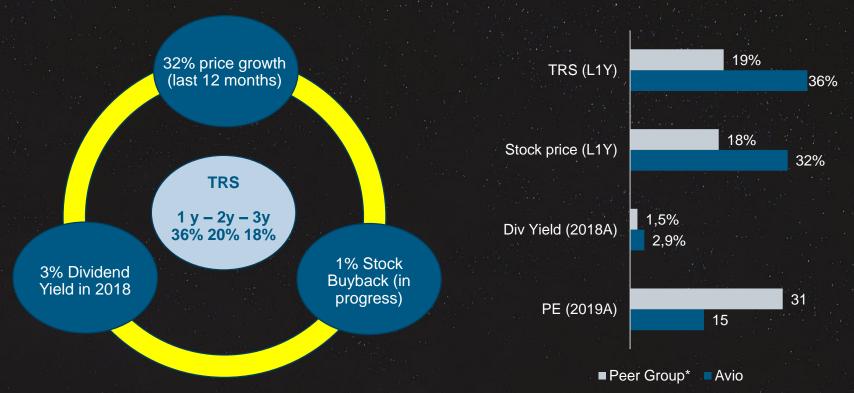
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Avio providing top-in-class return to shareholders





^{*} Peer group includes OHB, Safran, Aerojet Rocketdyne, Rolls-Royce, Boeing



THANK YOU

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