

The background of the slide is a dramatic photograph of a rocket launch. The rocket is seen from a low angle, ascending steeply into a clear blue sky. A thick, dark plume of smoke and fire trails behind it, extending from the bottom center towards the top right. The lower portion of the image is filled with a dense layer of golden, sunlit clouds, creating a textured, layered effect. The overall lighting is warm and golden, suggesting a sunrise or sunset.

# Investor Presentation

## Kepler Chevreux Investor Conference

**16<sup>th</sup> July 2020**

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- **Executive Summary**

- Appendix



# Avio : a pure player in Space Launchers



- 360 M€ revenues (10% CAGR 2014-19)
- 1.000 employees
- 400 M€ Mkt Cap
- 70% free float
- 4% Mgmt share



Ariane 6

NEW 2021



Vega C

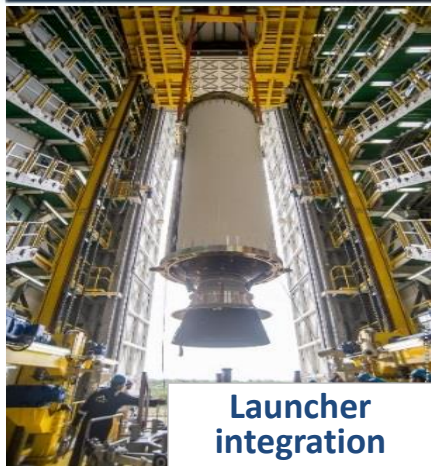


- European heavy launcher (10.5 tons in GTO)
- Avio: partner and supplier for strap-on boosters

- European light launcher (1.5 tons in LEO)
- Avio: developer, manufacturer, launcher system integrator



# Industrial operations in Europe and French Guyana



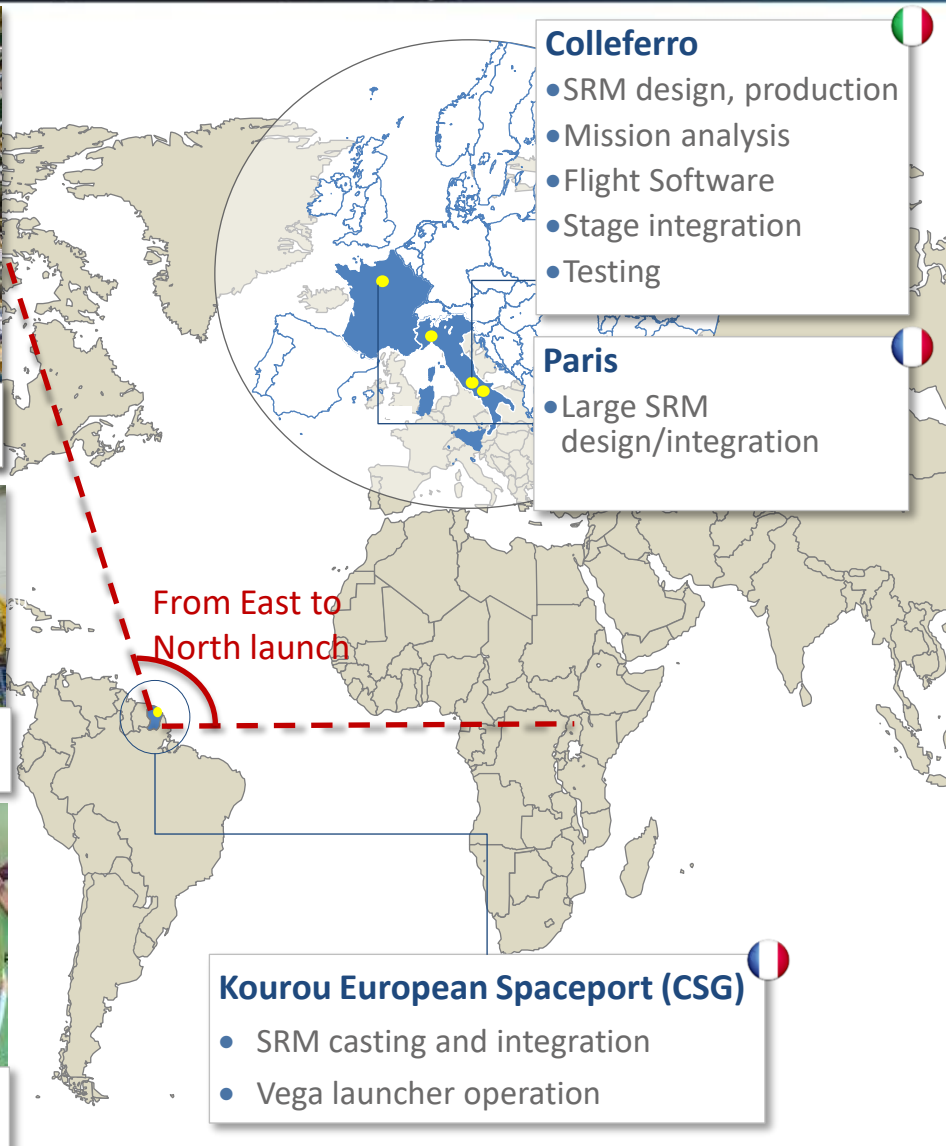
**Launcher integration**



**Main stage integration**



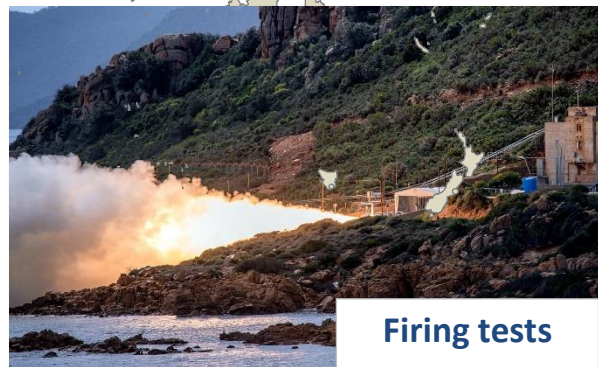
**Propellant casting**



**SRM Manufacturing**



**Upper stage integration**



**Firing tests**

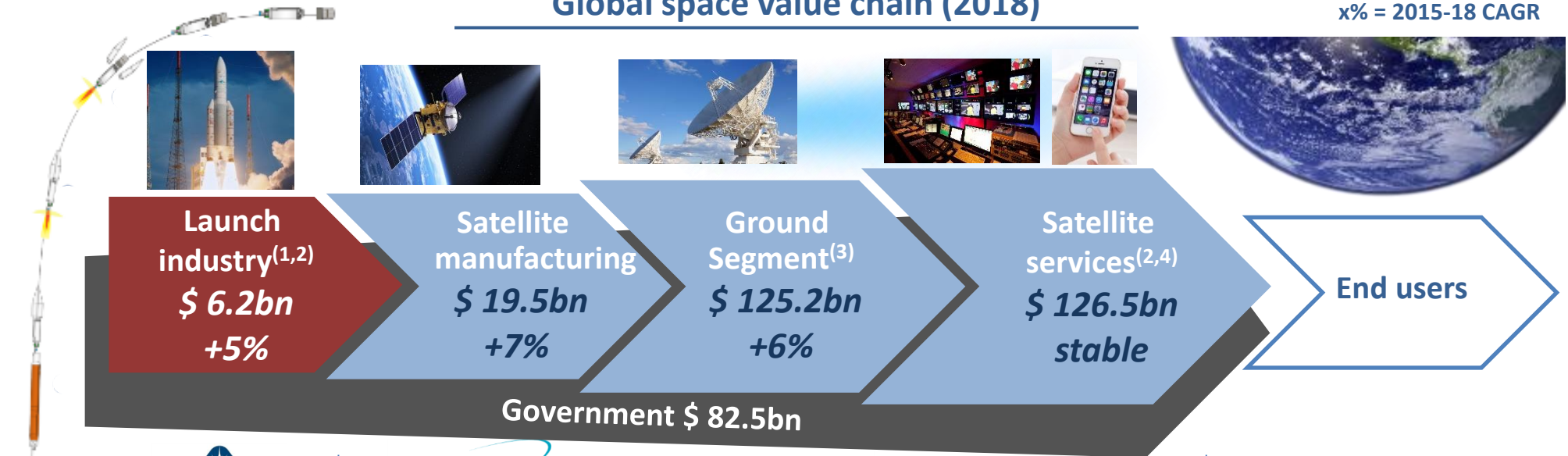


# The launch industry is the gateway to the Space economy



## Global space value chain (2018)

x% = 2015-18 CAGR



Source: Satellite Industry Association (2018)

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- (1): Includes launcher manufacturing and launch service activities
- (2): Commercial services revenues only
- (3): Includes GNSS chipsets and Related
- (4): Includes commercial humanflight

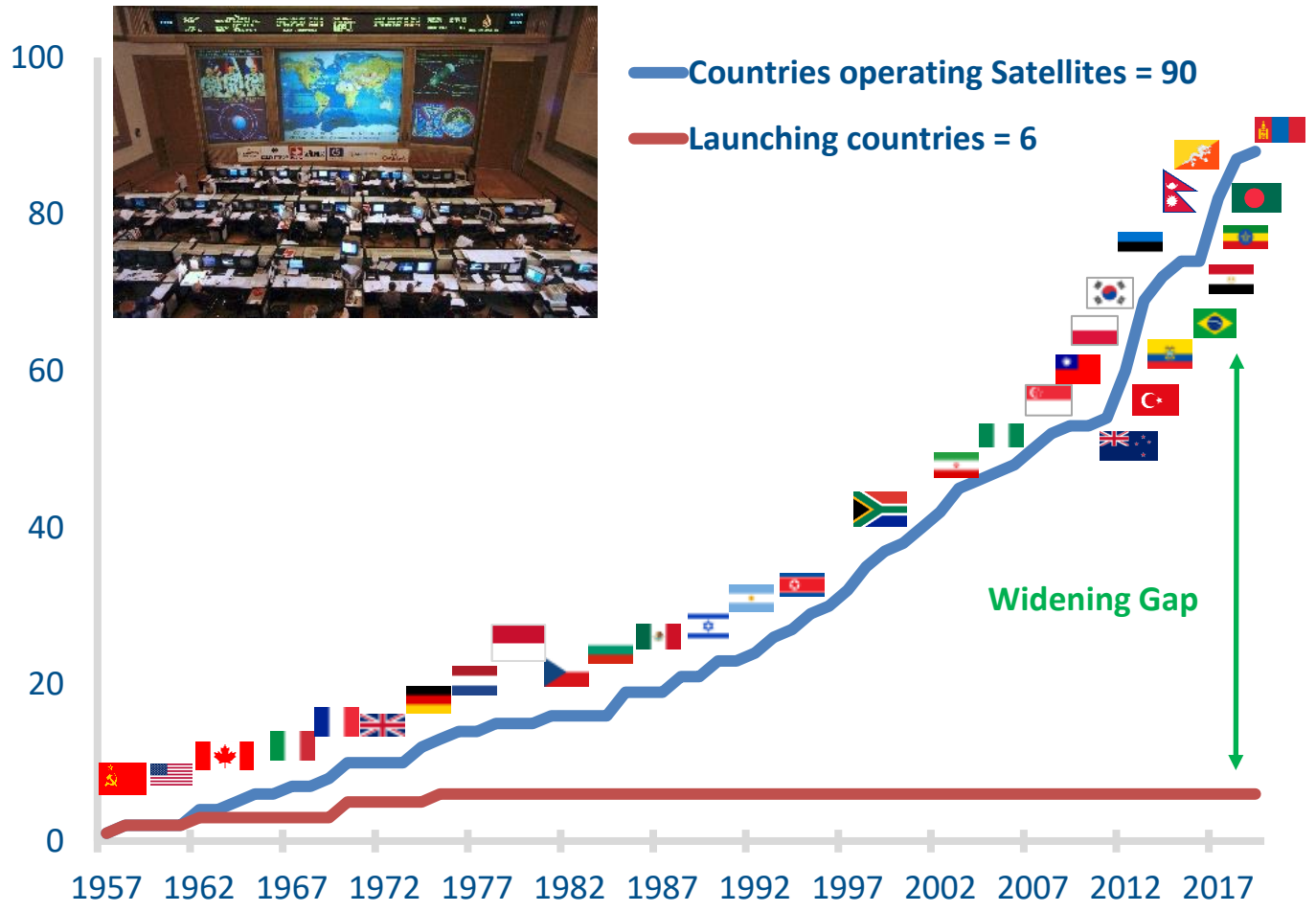


# Increasing gap between geographic origin of demand and supply



## # of Countries

## Population covered



# For the next decade: stable launch demand in MEO-GEO, fast-growing in LEO



World Market

## World total mass at launch (tons)

X = CAGR

Orbit  
(altitude)

Other

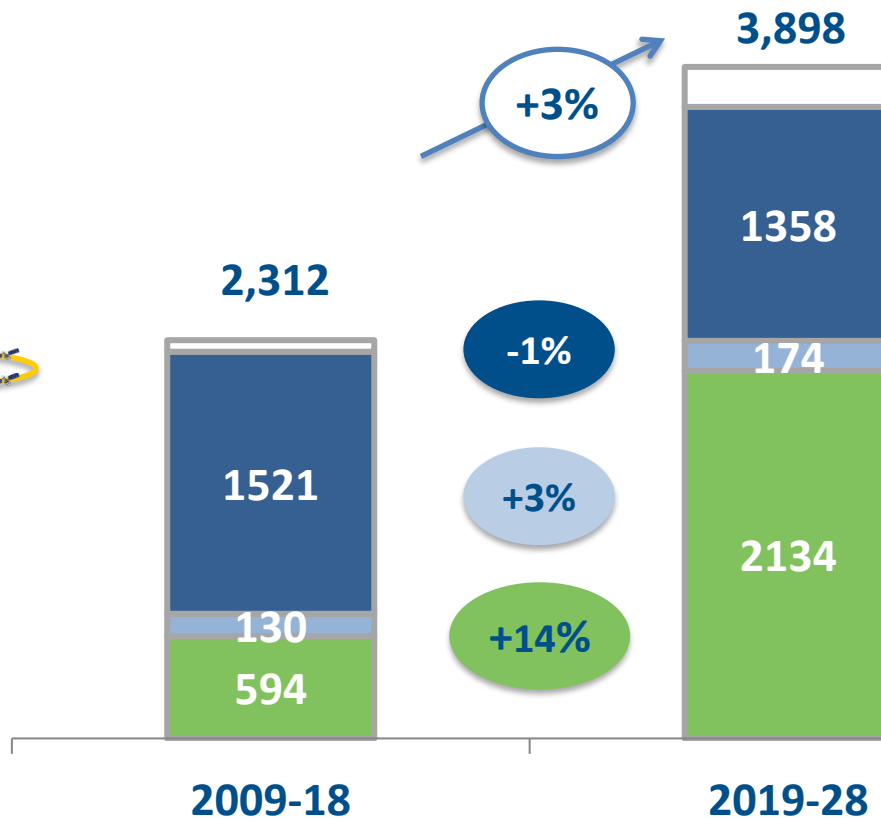
GEO



MEO



LEO



Key applications



10y LEO expected growth re-assessed at +14% (last year estimate +9%)



# Growth in demand of satellite services is driven today largely by Earth Observation and connectivity services



## Application

## Example

## End Users

### Infrastructure & Transportation



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

### Environment & Climate



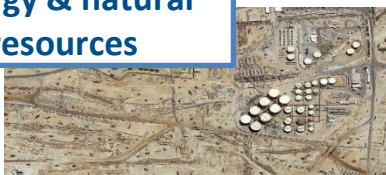
- Farmers
- Insurance companies
- Meteorological agencies
- Civil Protection agencies

### Security & Intelligence



- Defense
- Intelligence agencies
- Rescue operations

### Energy & natural resources



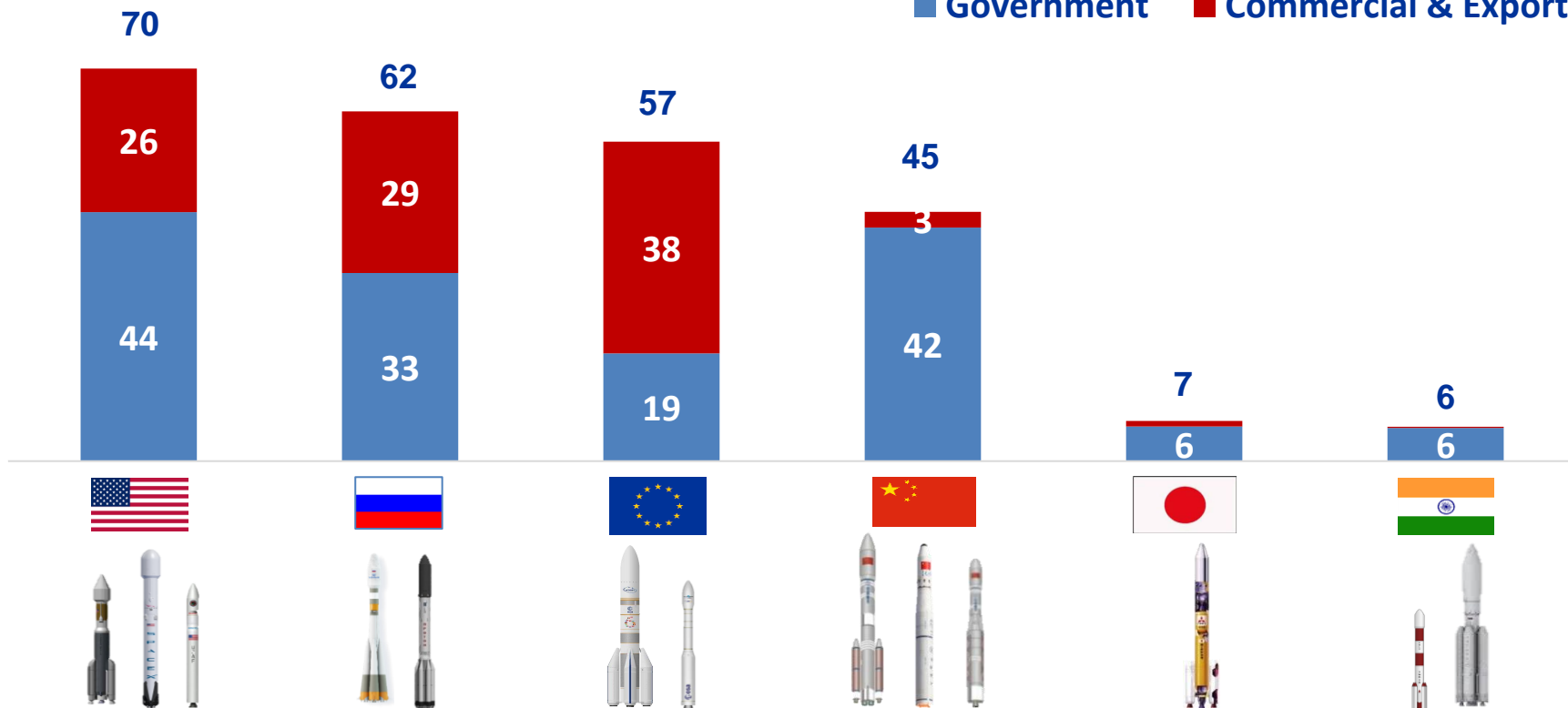
- Investors & financial analysts (Quant, Commodity)
- Insurance companies

# Launch capabilities concentrated in a few countries. Export capacity essentially in Europe and USA



## Average Annual Mass Launched in 2009-18 (Tons)

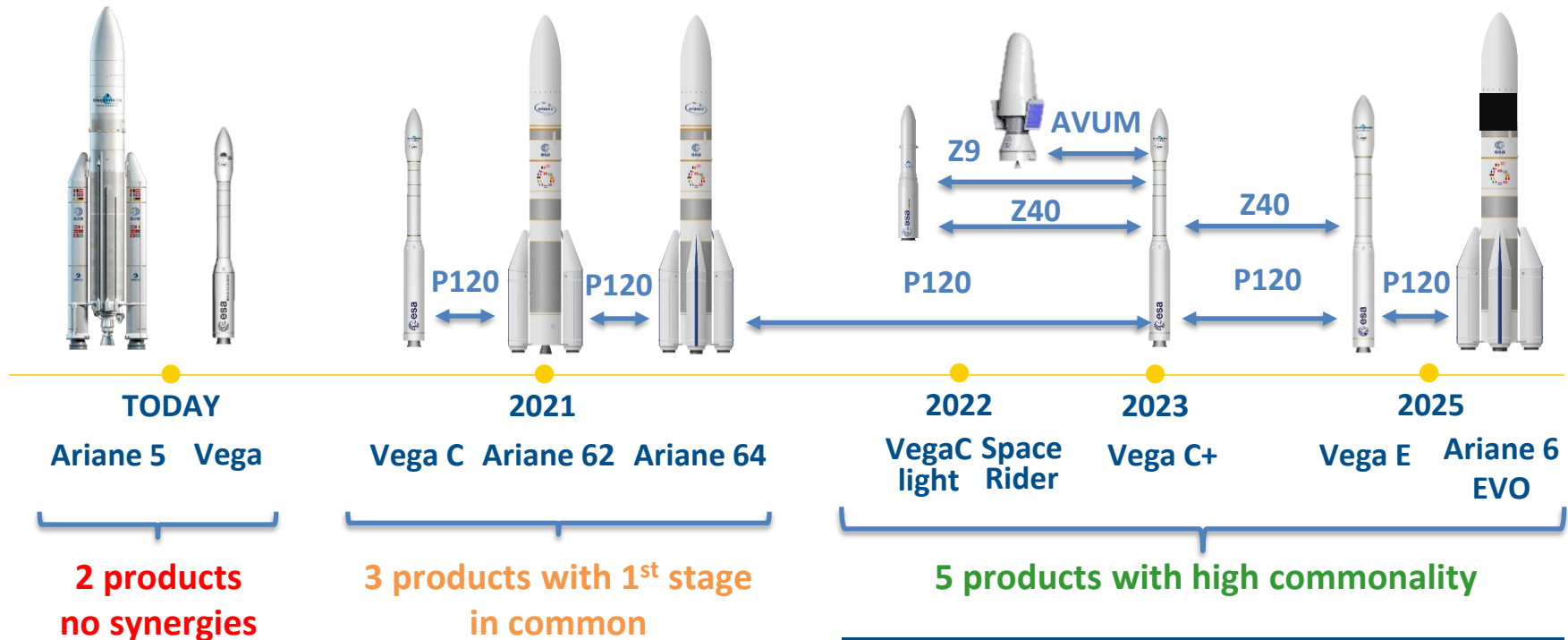
■ Government ■ Commercial & Export



# 2019 – ESA Ministerial Council: secured €490M funding for new development projects



## Product roadmap funded at ESA Ministerial Council '19



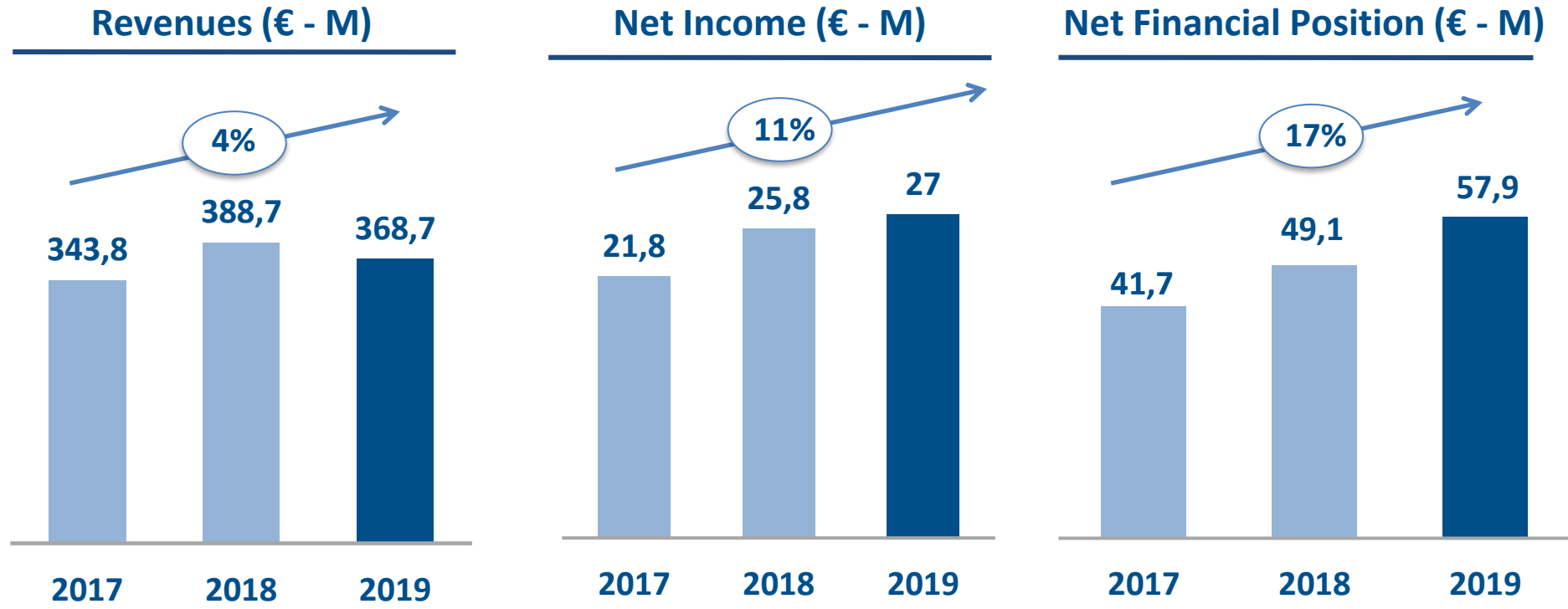
**MC '19: €2.2B funding for launchers (of which ~€490M for Avio)**



# Steady growth of earnings and cash since 2017



x% = CAGR 2017-'19



Dividends  
(€ - M)

10      11.5      -

CAPEX  
(€ - M)

29      23      29



# Next steps – Busy 2020 and incoming contracts



- **Upcoming flight activity**
  - VV16 SSMS – August
  - VV17 – October
  - VV18 – by year-end
  - Vega C - launch campaign to start by year-end
  - Ariane 5 VA253 – end of July
- **Backlog**
  - Contractualization of the ESA '19 MC developments in progress
  - Tactical production contracts signed in May
- **Development**
  - Vega C ground qualification review – 3<sup>rd</sup> quarter
  - P120 QM2 test (third and last static firing test for Ariane 6) – by July
- **2020 Financial results**
  - September 14<sup>th</sup>: HY 2020 – possible definition of the 2020 Guidance
  - November 5<sup>th</sup>: 9M 2020 results

# Agenda

- Executive summary

- **Appendix**

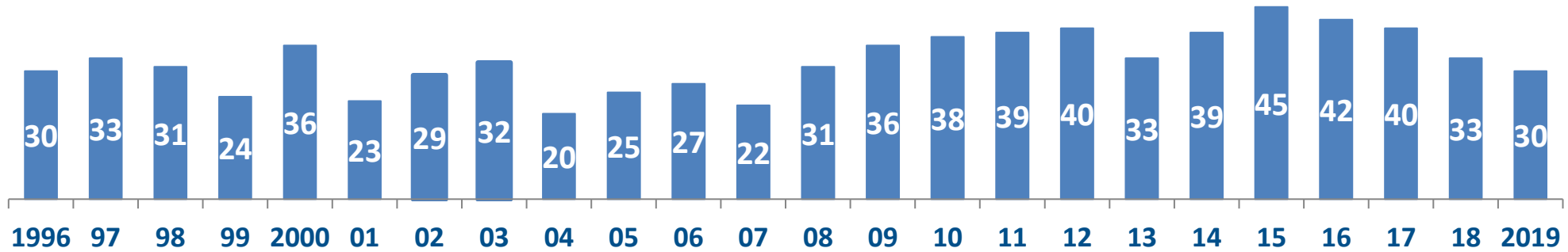


# Ariane 5: the workhorse for Geostationary Satellites

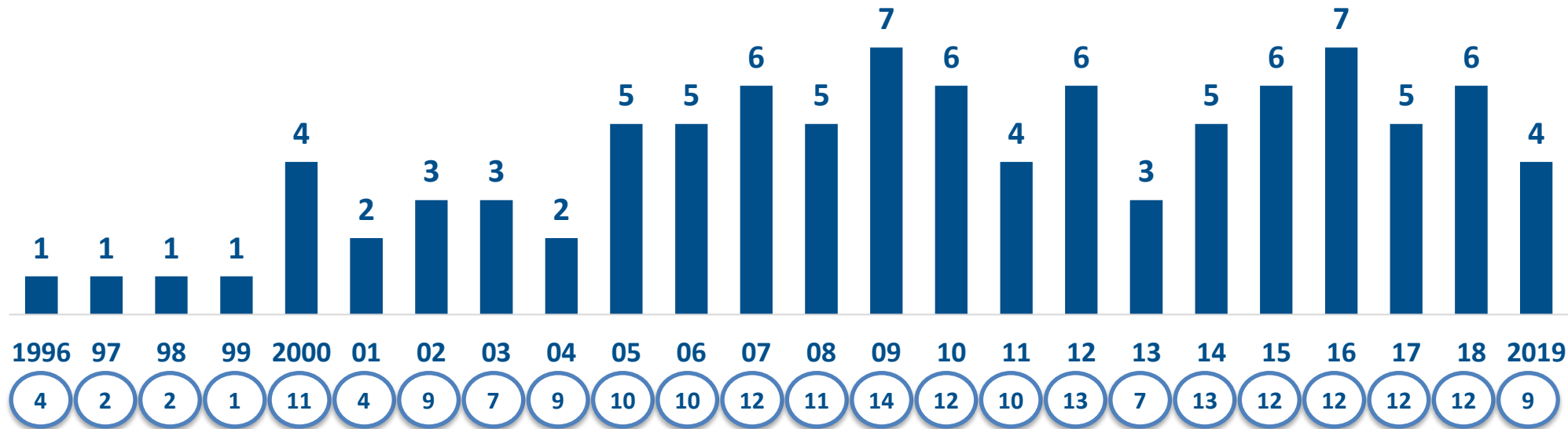


Total # of satellites launched into GTO worldwide

**x** = # of sats orbited by Ariane5



# of Ariane 5 Launches (launches with two satellites)



SOURCE: Web Search

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**A stable and resilient business**



# Ariane: global customer base for GEO launch



arianespace  
arianegroup

NOT EXHAUSTIVE

● = Last 15 yrs flights



Ariane 5



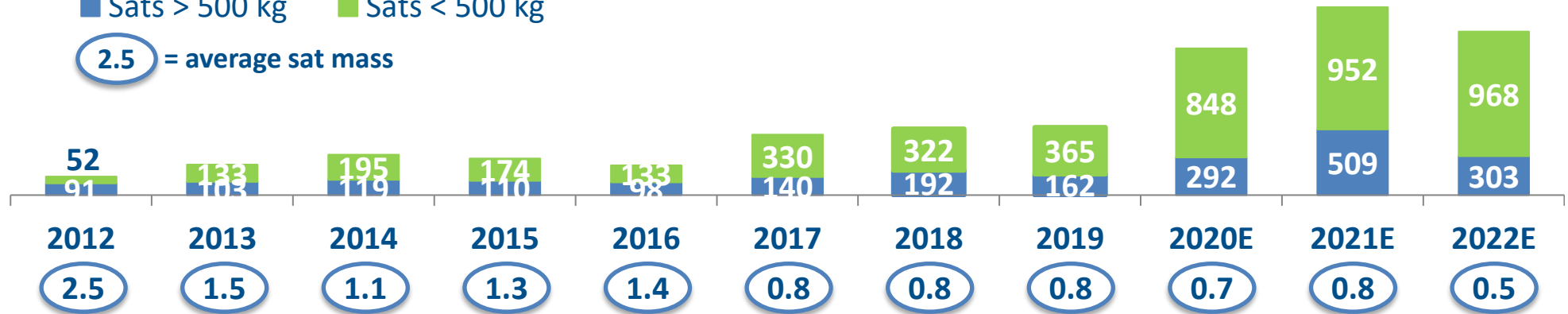
# With the Sat miniaturization trend, Vega is ready to increase launch cadence to perform 5 flights per year



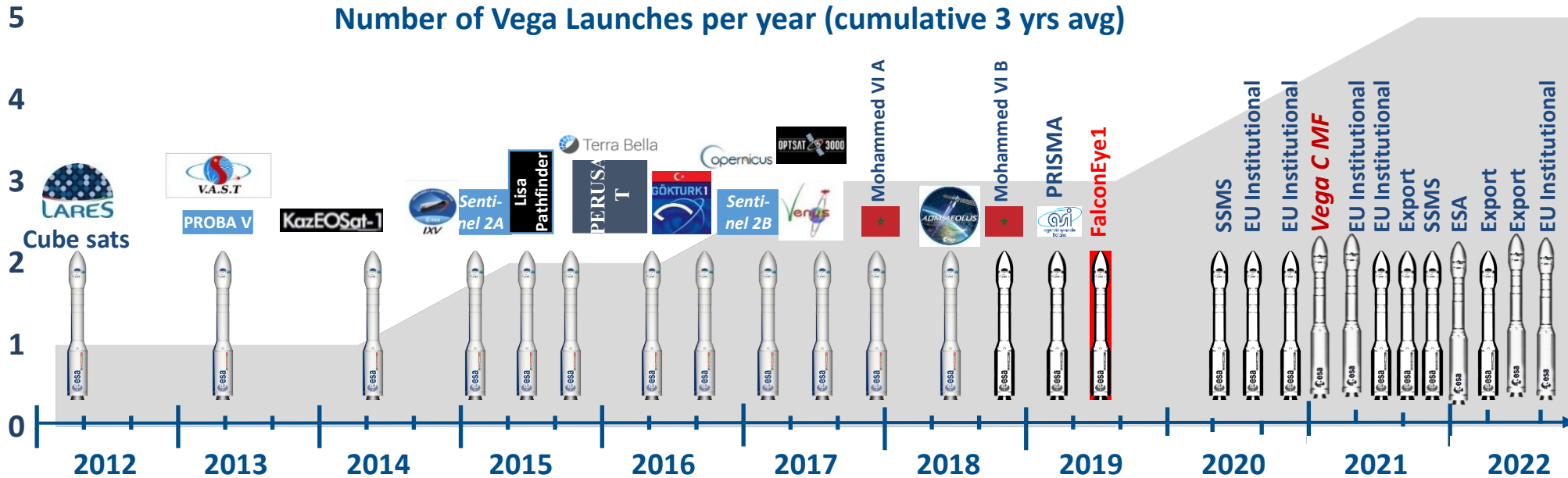
Total # of satellites launched into Space worldwide

■ Sats > 500 kg   ■ Sats < 500 kg

2.5 = average sat mass



Number of Vega Launches per year (cumulative 3 yrs avg)

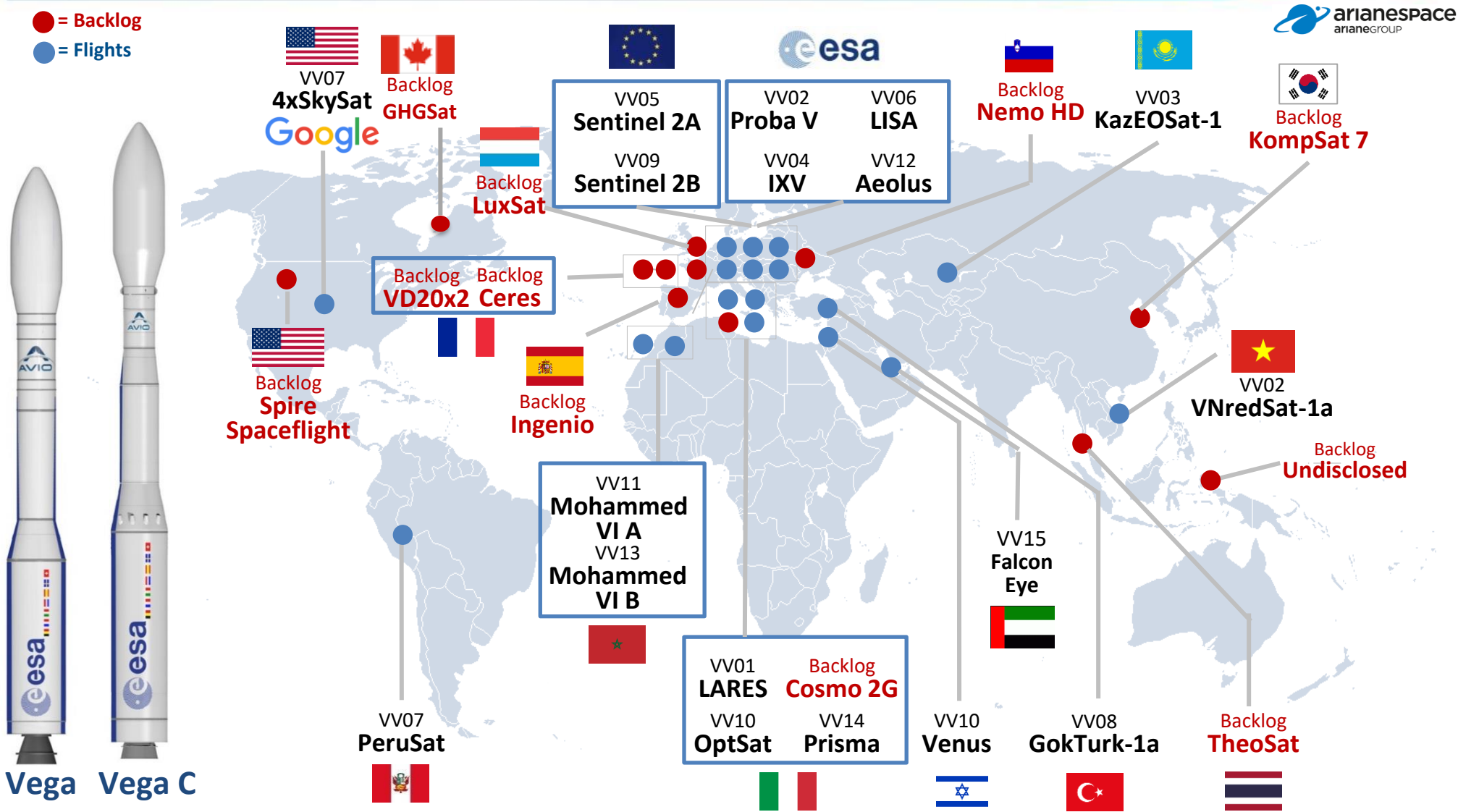




# Avio established as a global player through its flagship product Vega dedicated to LEO launch



- = Backlog
- = Flights

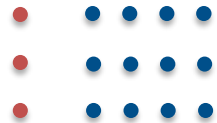


# Automation and standardization to increase cost competitiveness



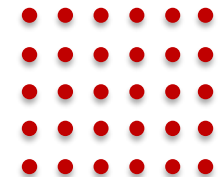
Vega Ariane 5

P80 P230

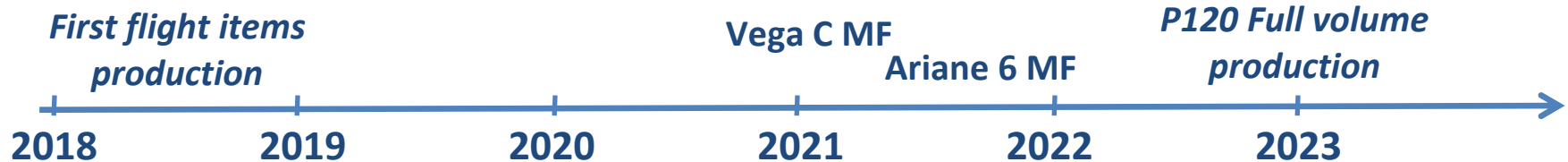


Vega C Ariane 62 Ariane64

P120



Single main-stage, higher volumes, economies of scale





# May 2020: Vega on the Launch Pad and ready to return-to-flight



New Launch date:  
17 August

## VV16 – Vega return to flight with SSMS PoC\*



- VV16 integrated, operations to resume on May 25
- First European «rideshare mission» for small satellites (booming demand)
- More than 50 satellites from the US and the EU including Planet, Spire, GHGSat, Tyvak, ISIS
- Innovative mission delivering on 2 different SunSynchronous orbital planes

# 2019: Key accomplishments on new developments



**Largest carbon fiber SRM**



**A6/Vega C: P120 firing test (Kourou)**



**Vega C: Zefiro40 firing test (Sardinia)**

**1st European Re-entry Vehicle**



**Space Rider Project Design Review**



**Return to flight: Zefiro23 firing test (Sardinia)**



**Vega E: M10 LOX-CH firing test (USA)**



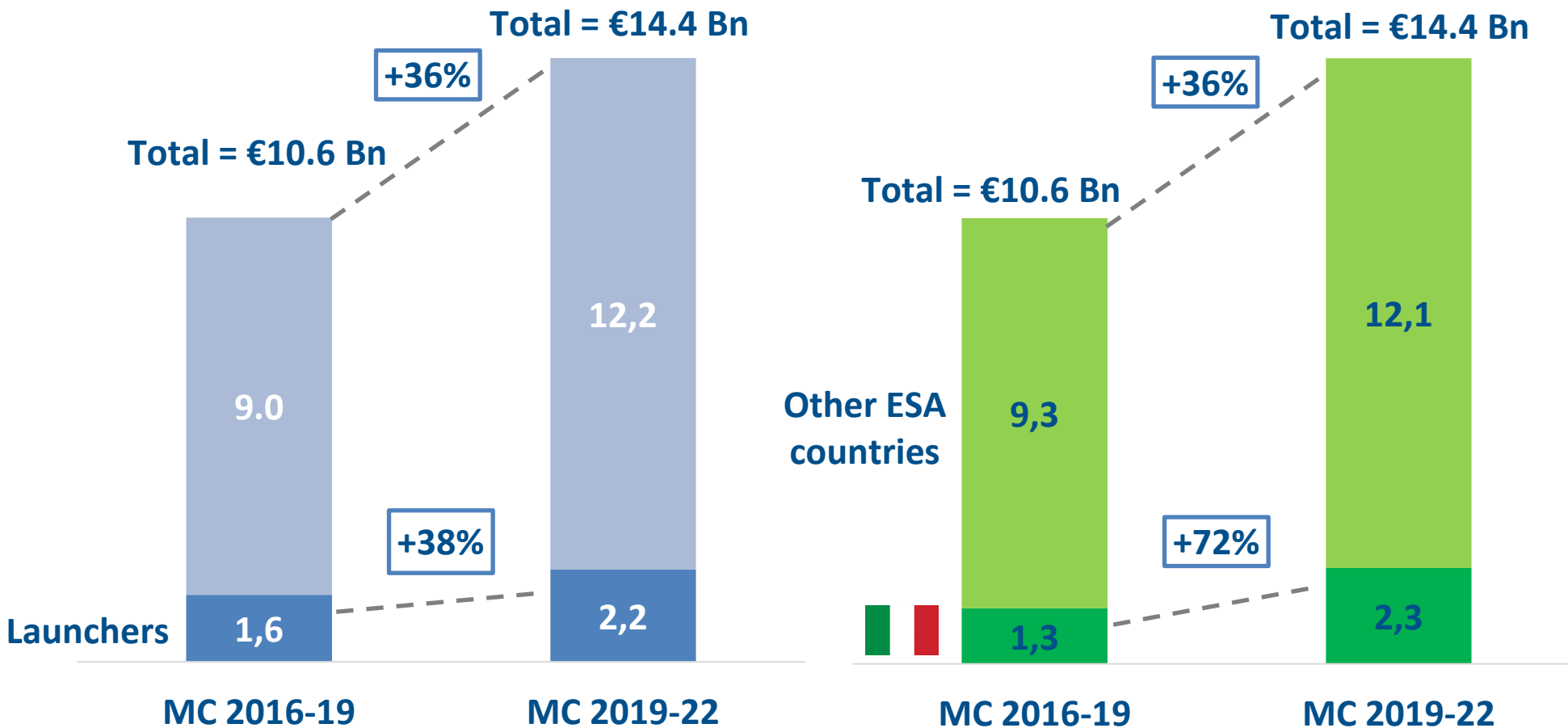
**First successful Camm-ER tests**



# Positive outcome of the 2019 ESA Ministerial Council



## ESA Ministerial Council Subscriptions



# Positive outlook for the evolution of Vega programs



## Key ESA Space transportation programs under Italian leadership



SOURCE: ESA and ASI

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# Vega C getting ready for Maiden Flight by 1<sup>st</sup> semester 2021



## Sub-systems readiness

## System-level tests

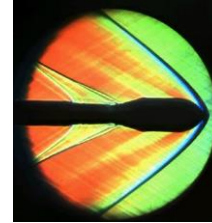
FAIRING



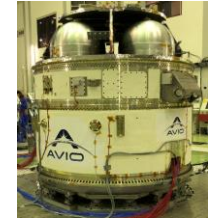
Fairing



Vampire adapter

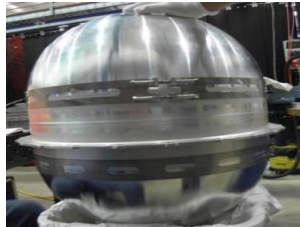


Wind Tunnel Test



Vibration tests

AVUM



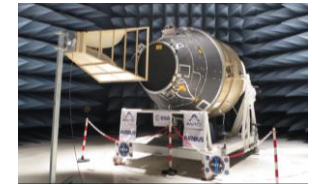
New prop. tanks



AVUM new gas tank



HWIL tests



UCMEC test

Z9

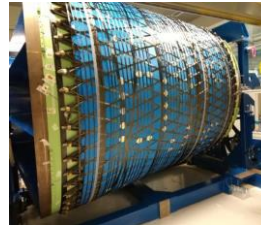
IS2/3

Z40

IS1/2



Z40 Firing Test (May)



IS2/3



A2 Assy test

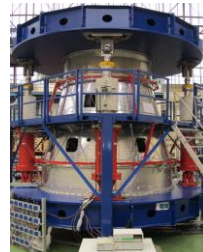


UCMEC tests

P120



P120 Firing Test (Jan. '19)



IS1/2

## New facilities



P120 BBP



P120 BIP Extension





# Ariane 6 getting ready for Maiden Flight by end of 2021



FAIRING

VINCI

VULCAIN

4xP120



Ariane 6 Fairing Shell completed (Jun.)



Ariane 6 launch vehicle building under way



Ariane 6 mobile gantry in construction



Vulcain 6 Firing Test (Jul.)



Upper Stage Tanks' Integ. (Jul.)



Vinci Engine Qualification Test (Oct.)



P120 Firing Test (Jan. '19)



Ariane 6 P120 Rear Skirt Integ. (Aug.)



Ariane 6 Launch Pad almost ready

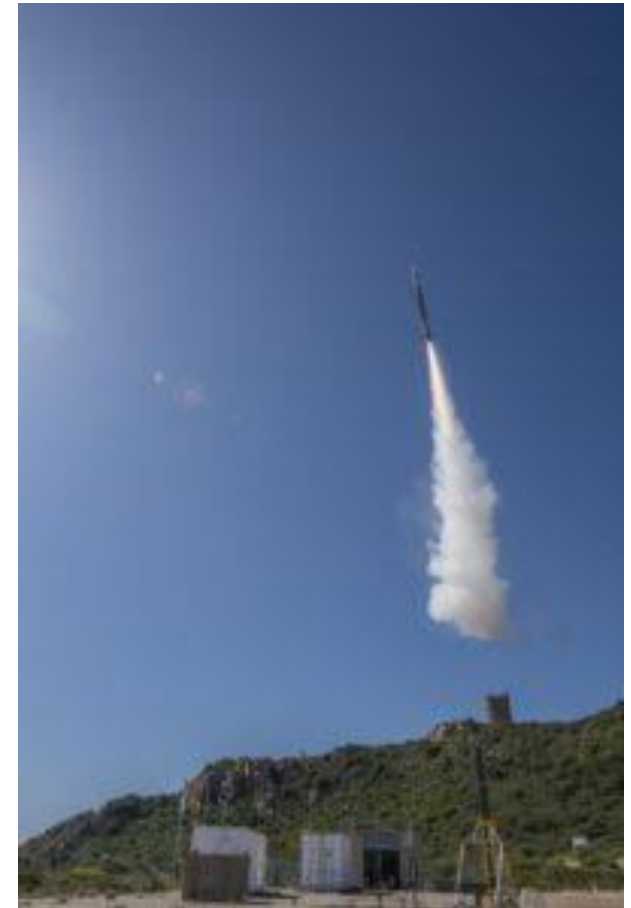


# Tactical propulsion: Successful Camm-ER tests



**MBDA**

- MBDA successfully completed trials of the CAMM-ER air defence missile
- Series of firings proving performance at extended ranges and high altitudes
- CAMM-ER features a larger rocket motor to provide extended range beyond 40 km
- Avio responsible for the propulsion of the CAMM-ER defence system



# Q1 2020 financials in line with Q1 2019



Q1 2019 ACTUAL	MAIN ECONOMICS/ FINANCIALS	Q1 2020 ACTUAL	DELTA	DELTA	Comments
€ - M		€ - M	€ - M	%	
82,6	NET REVENUES	80,0	(2,6)	-3%	<ul style="list-style-type: none"> <li>• Slight slowdown in production and development activities</li> <li>• EBITDA benefitting from effective fixed costs control</li> <li>• Increase of non recurring costs related to the COVID-19 outbreak (e.g. protection equipment and donations)</li> <li>• Increase in depreciation related to previous years' capex</li> </ul>
7,0	EBITDA REPORTED	7,2	0,2	4%	
8,4%	% on net revenues	9,0%			
7,0	EBITDA ADJUSTED	7,8	0,8	11%	
8,5%	% on net revenues	9,8%			
3,1	EBIT REPORTED	3,1	0,0	0%	
3,8%	% on net revenues	3,9%			
3,2	EBIT ADJUSTED	3,8	0,6	18%	
3,9%	% on net revenues	4,7%			
<b>31 DEC 2019 ACTUAL</b>		<b>31 MAR 2020 ACTUAL</b>	<b>DELTA</b>	<b>DELTA</b>	
€ - M		€ - M	€ - M	%	
57,9	NET CASH POSITION	42,1	(15,8)	-27%	• In line with ordinary business cycle

# Publicly announced flights in backlog and beyond for Vega and Ariane



## Flights in backlog, detailed launch dates and schedule TBD

Vega/  
Vega C



Comm. Inst. Inst.



Inst. Inst. For. Inst. For. Inst.



Inst. Inst.



EU institutional opportunities

Ariane 5  
&  
Ariane 6



Comm.



Comm.



Comm.



Inst.



Inst.



Comm.



Inst.



Inst.



Inst. Comm.



Inst.



Comm.



Inst.



Inst.



5 sats signed +  
EU institutional

2020

2021

2022

Beyond

Some flights have the option to fly alternatively with Vega or Vega C

Some flights have the option to fly alternatively with Ariane 5 or with Soyuz

Source: Arianespace announcements and PRs, ESA, Press releases, Public information, NextSpaceflight.com

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# Share buyback program launched in August 2019



## Objectives

- **Efficient use of liquidity** generated by the ordinary business activities through a **medium-long term investment**
- Offer an additional **return to shareholders** along with dividend payments
- Possible use **own shares in M&A transactions**

## Program scheme

- **€9M maximum investment amount** (as decided by shareholders in April)
- Initial mandate by BoD in August for €5M lasting until **October 2020**
- **Share Buyback** carried out **by an independent broker (Equita SIM, S.p.A.)**

Following the purchases made so far, as of May 22<sup>nd</sup> 2020 Avio S.p.A. holds # 315,300 own shares, corresponding to 1.20 % of total Avio's share capital (9<sup>th</sup> August – 22<sup>nd</sup> May)\*

\*Daily purchases capped by law at 25% of average daily volumes of the previous 20 trading days



# Structural elements of Avio's business resilience



	Drivers	Elements of resilience
Commercial	<ul style="list-style-type: none"> <li>FY 2019 Net Order Backlog ~€700M</li> <li>New orders from ESA to be received from 2020 ~€500M</li> </ul>	<ul style="list-style-type: none"> <li>2 years-equivalent revenues, 3-4 years business visibility based on planned roll-out</li> <li>&gt; 10 Vega flights &amp; &gt; 20 Ariane flights</li> <li>~70% of backlog for government end customers</li> <li>Development projects subscribed at ESA MC '19</li> </ul>
	<ul style="list-style-type: none"> <li>Positive NFP ~€60M</li> <li>Low-interest Gross Debt ~€50M</li> <li>Tax credits &gt;€80M</li> <li>Own shares ~€4M</li> <li>Mgmt Long Term Incentive ~€1M</li> </ul>	<ul style="list-style-type: none"> <li>Available cash to better manage operations</li> <li>Flexibility in Capex planning &amp; execution</li> <li>EIB 7 years-term debt</li> <li>&lt;1% fixed interest rate</li> <li>Deferred tax assets (Income Tax)</li> <li>Additional VAT and R&amp;D credits</li> <li>Buyback limit €9M</li> <li>Bonus payment voluntarily deferred to 2021</li> </ul>
Financial		

# Vega E development : nearing full scale M10 firing test



M10  
LOX-CH  
Upper stage



- Conducted extensive firing test campaign on **sub-scale combustion chamber**
- **M10 LOX-CH Engine components PDR :**
  - **Turbopumps** (Liquid Oxygen and Methane)
  - **Combustion Chamber** (realized with **additive manufacturing**)
  - **Igniter**
- **Text performed successfully on February-March 2020 at NASA facilities in the USA**



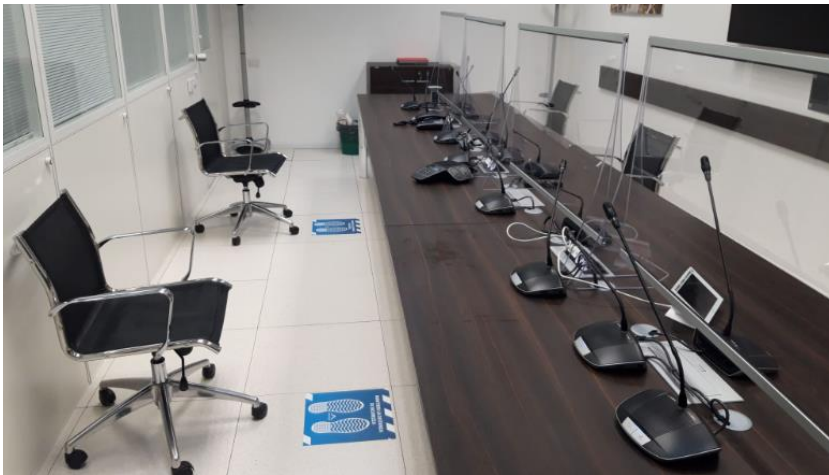
# End of the COVID-19 lockdown: adaptation to new normal



11 May -Avio VV16 team departing to Kourou on Alitalia charter flight from Rome FCO



Individual protection equipment



Adapted meeting rooms



Modified layout to access facilities



Hand sanitizer dispensers

# Recent commercial successes highlight customers' confidence in Vega and Ariane



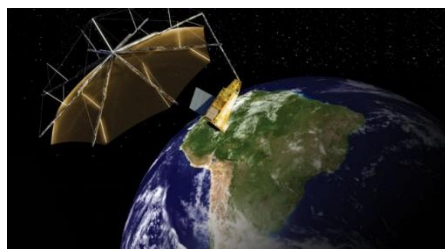
## Vega

### Earth Explorer Biomass

- Earth Observation satellite to **monitor forests degradation and fires through the analysis of carbon dioxide**
- Weight: **1.2 tons**
- Orbit: **SSO @666 Km**
- Launch vehicle: **Vega**
- Launch date: starting in **2022**

### Undisclosed customer

- Earth Observation satellite to **monitor Typhoons**
- Orbit: **LEO**
- Launch vehicle: **Vega**



## Ariane

### Galileo constellation

- European Union constellation of navigation satellites for **EU citizens and enterprises**
- Weight per sat: **0.7 tons**
- Orbit: **MEO @23,616 Km**
- Launch vehicle: **Ariane 62**
- Current number of scheduled flights with Ariane 62: **6, with 4 additional sats announced on January 2020**
- Launch dates: starting in **2021**



SOURCE: ESA, Arianespace, Press search  
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# With also private investments in the Space sector continuing to grow rapidly



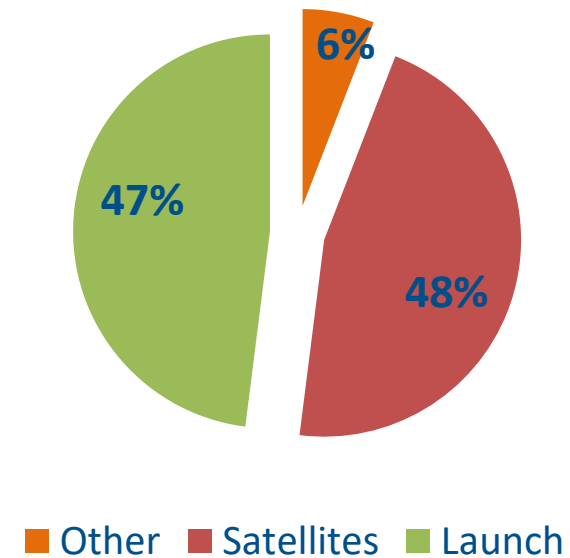
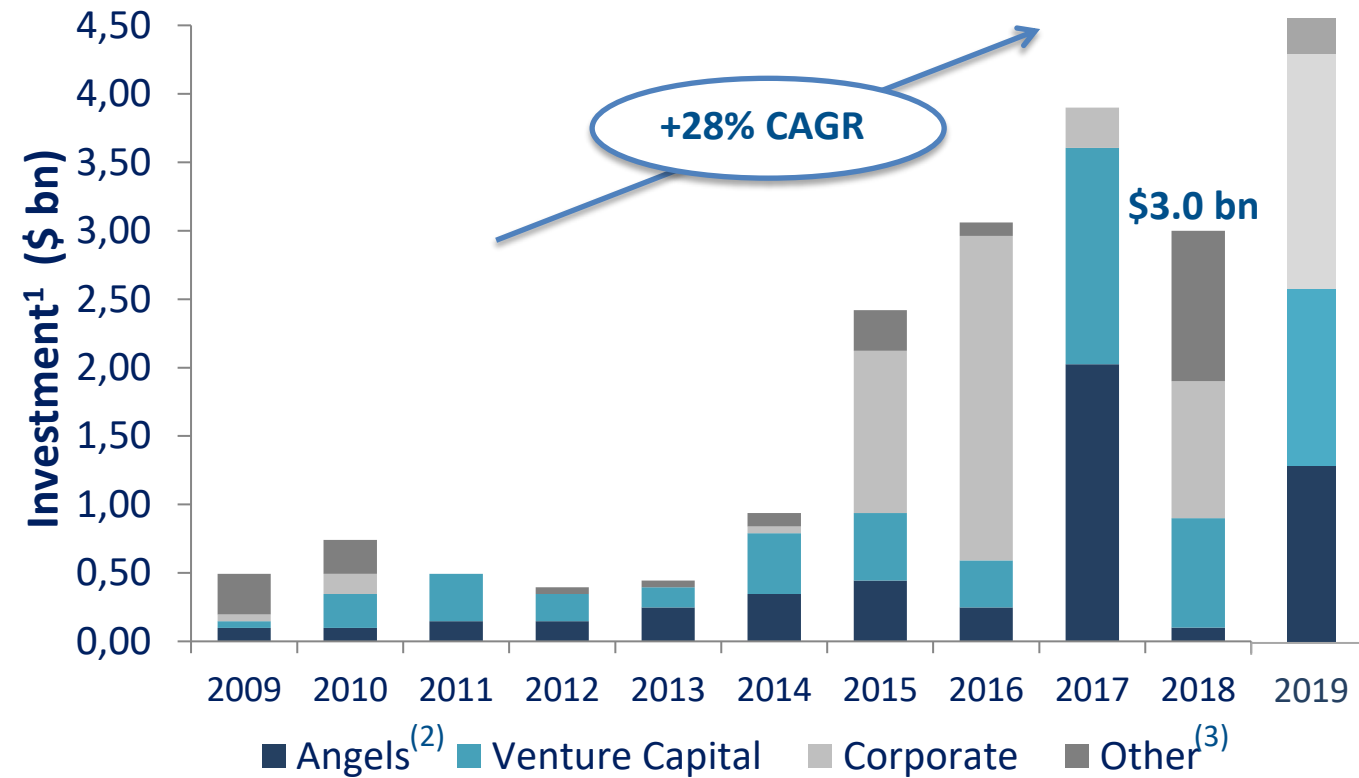
## Equity investment in Space Ventures

\$5.8 bn

+28% CAGR

\$3.0 bn

### Breakdown of cumulated 2009-2019 investments by sector (% of 28\$ Bn)



(1) Annual non-governmental equity investment

(2) Angels include investments from Jeff Bezos, Richard Branson, Elon Musk, and Robert Bigelow (total \$>2 bn)

(3) Other includes Foundations, Private Equity, Sovereign Funds, Crowd Platforms, etc.

Source: Space Angels Q4 2019 Investment Report

# 50 years of expertise in Space technologies with consistent track record



**Ammunitions**

**Ariane 1-3  
Separation  
motors**

**Ariane 4  
9.5 ton  
boosters**

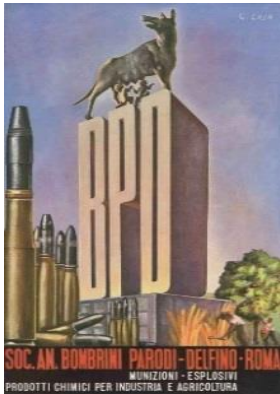
**Ariane 5  
230 ton  
boosters**

**Vega  
Launch  
system**

**VegaC Ariane6**

**VegaC Space  
Light Rider**

**Vega E**



1912

1968

1990

2000

2012

2020

2025

Managed by a team of Investors



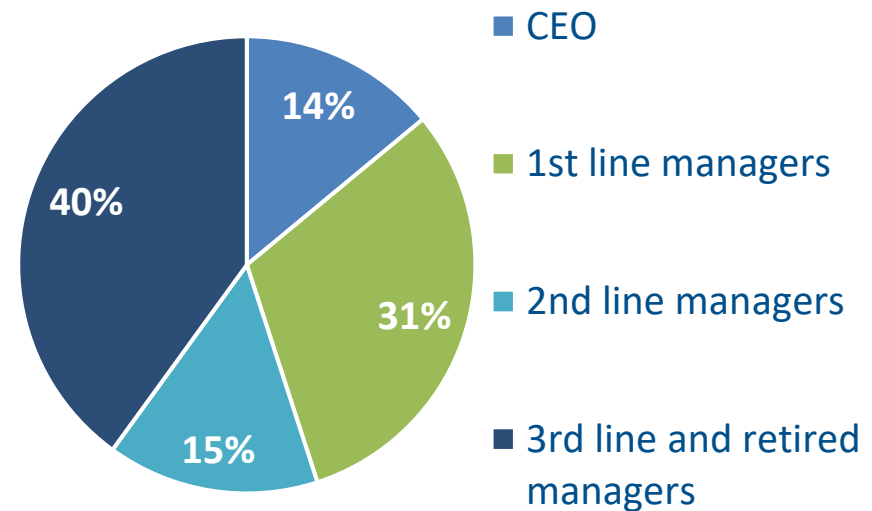
inOrbit

4% share in Avio

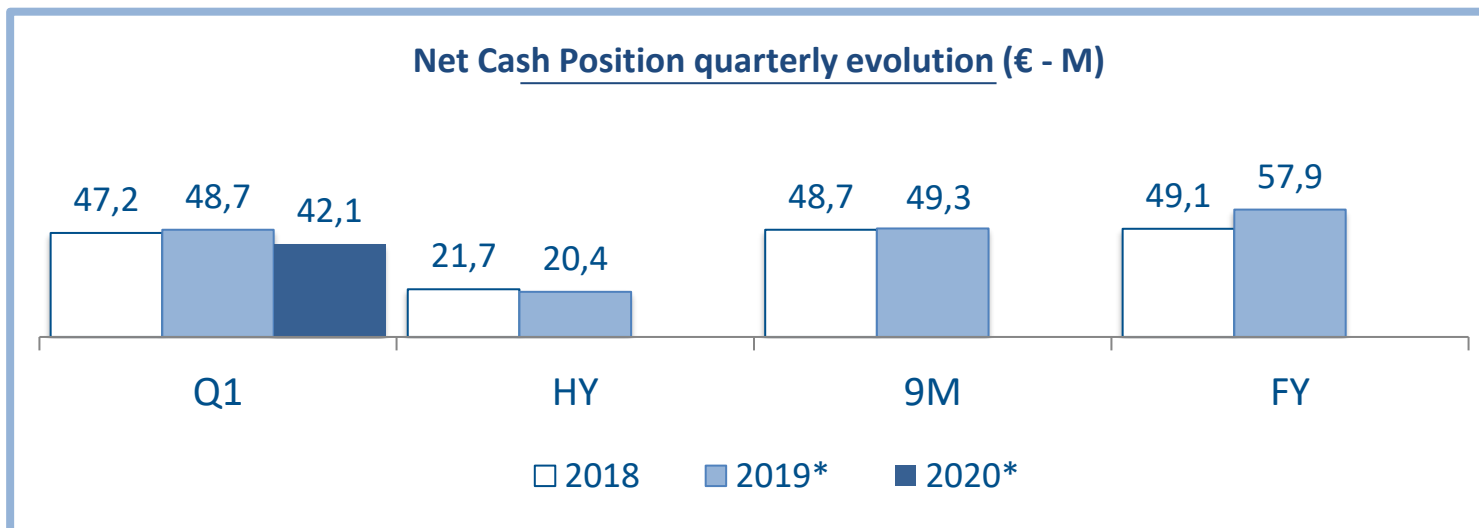
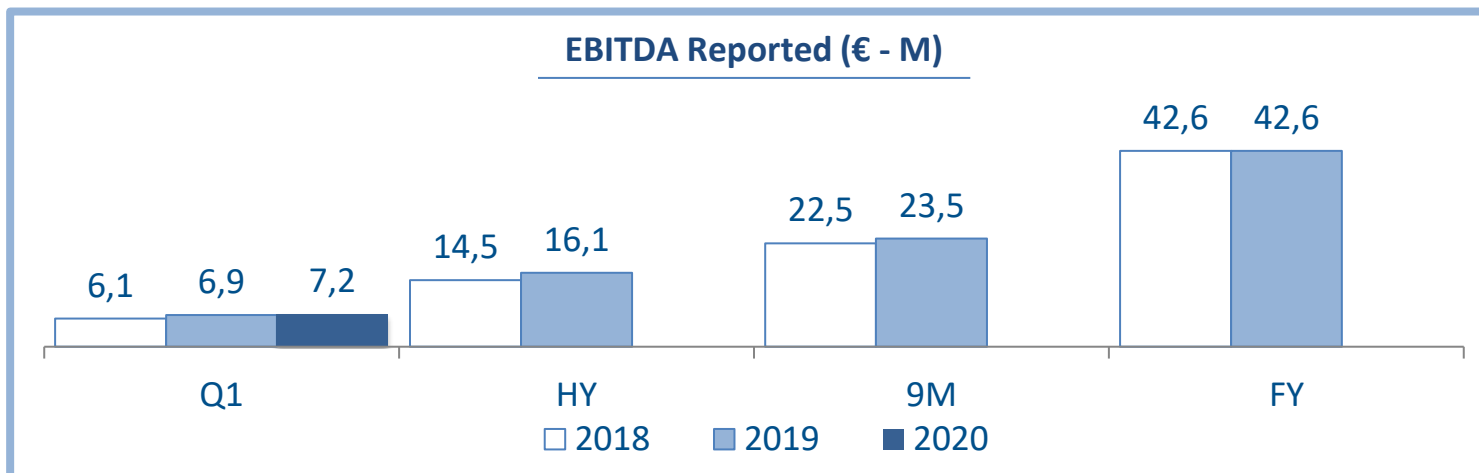
70 Avio managers as equity partners



### InOrbit shareholding breakdown



# Quarterly pattern of Reported EBITDA and Net Cash Position



\* Include effects of IFRS 16





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