



# Investor Presentation

**Banca IMI - 2020 Italian Stock Market Opportunities**

**Paris, 30<sup>th</sup> January 2020**

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# Agenda

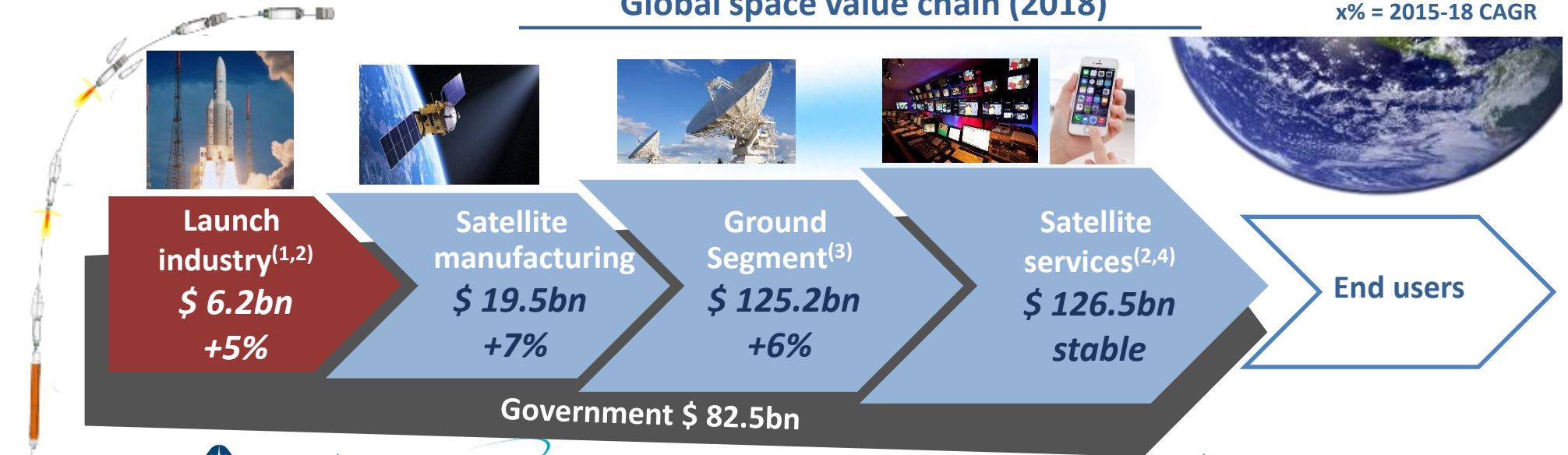
- **The Space launcher business**
  - Avio's positioning and evolution
  - Recent updates
  - Financials



# 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

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

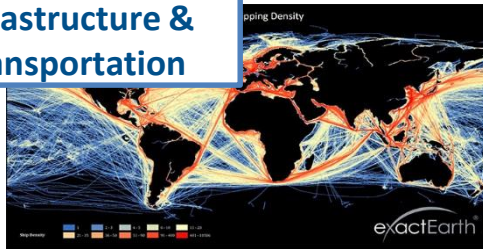


## Application

## Example

## End Users

### Infrastructure & Transportation

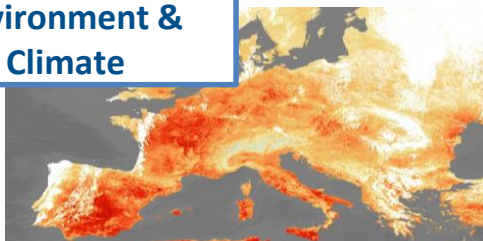


**ICEYE**

exactEarth®

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

### Environment & Climate

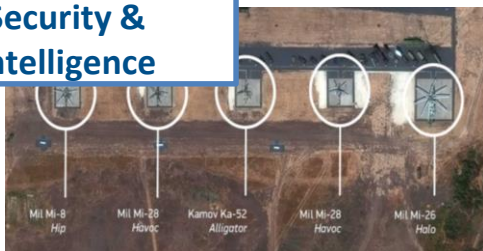


planet.

copernicus  
Europe's eyes on Earth

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

### Security & Intelligence



DigitalGlobe™ e-geos  
AN ASI / TELESPAZIO COMPANY

- Defense
- Intelligence agencies
- Rescue operations

### Energy & natural resources



AIRBUS  
DEFENCE & SPACE

TERRA SAR

PLÉIADES IMAGERY  
SERVICES

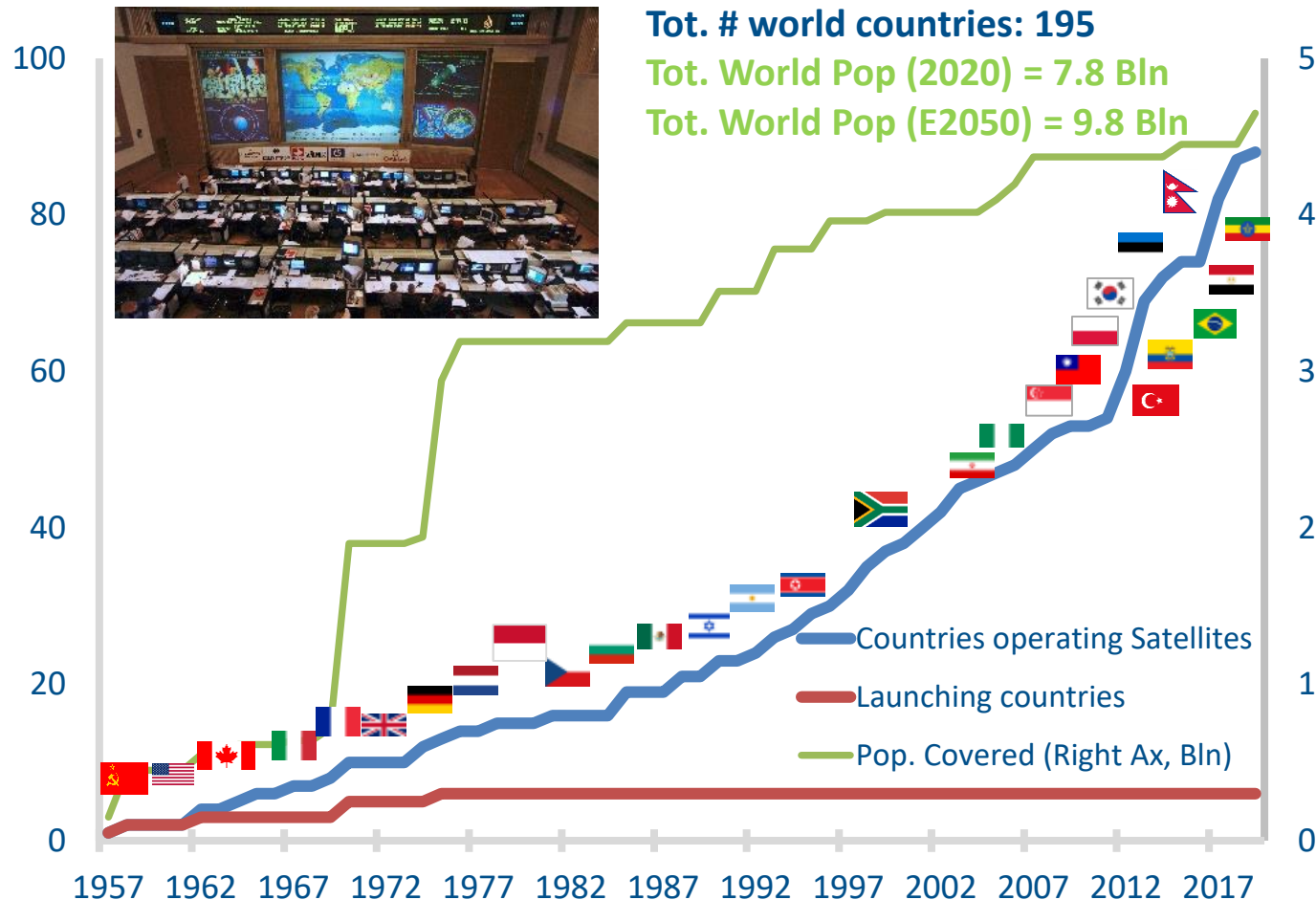
- Investors & financial analysts (Quant, Commodity)
- Insurance companies

# Increasing gap between geographic origin of demand and supply



# of Countries

Population covered

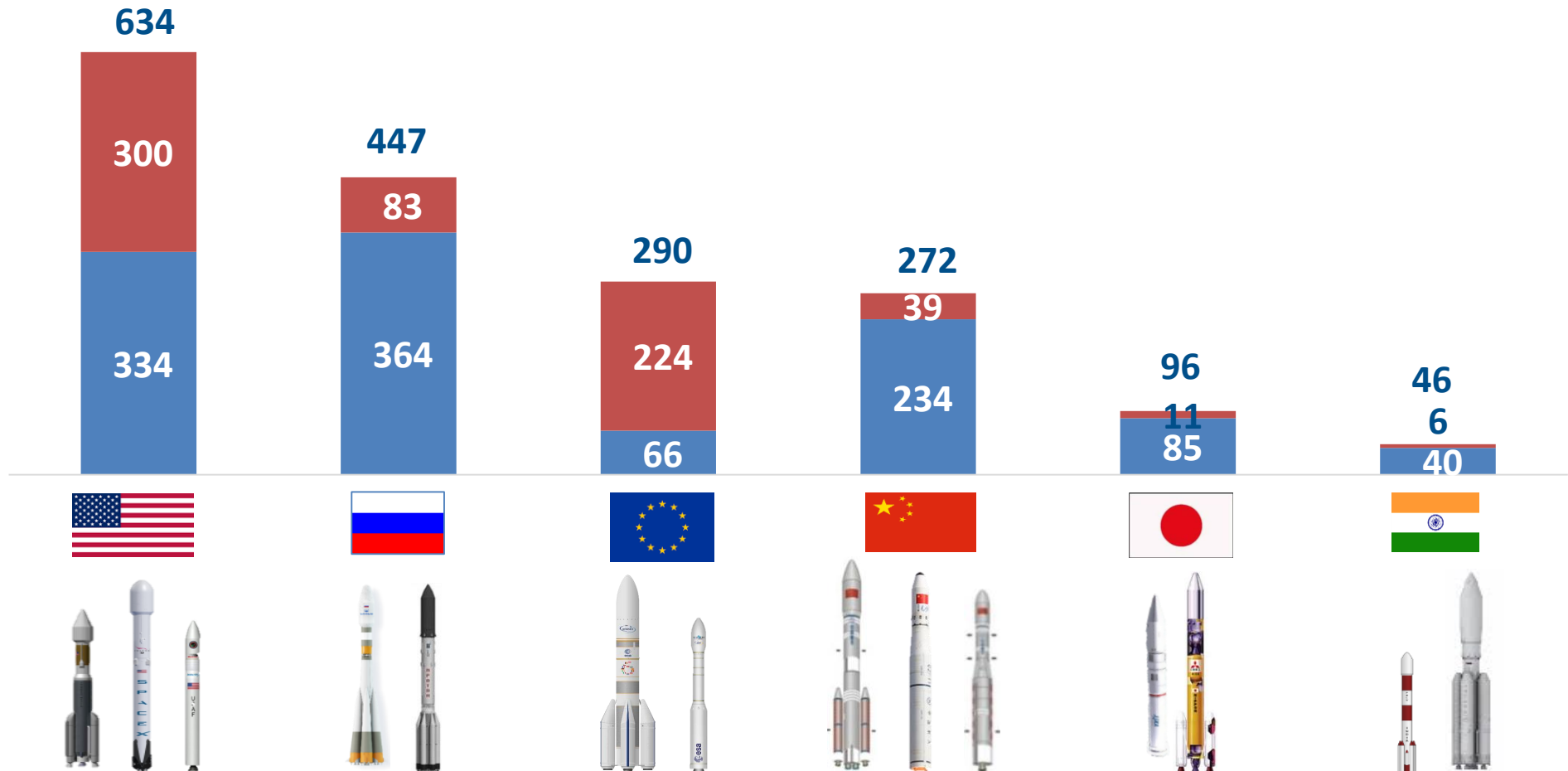


# Launch capabilities concentrated in a few countries. Export capacity essentially in Europe and USA



## Cumulated Mass Launched in 2015-19 (Tons)

■ Government ■ Commercial & Export

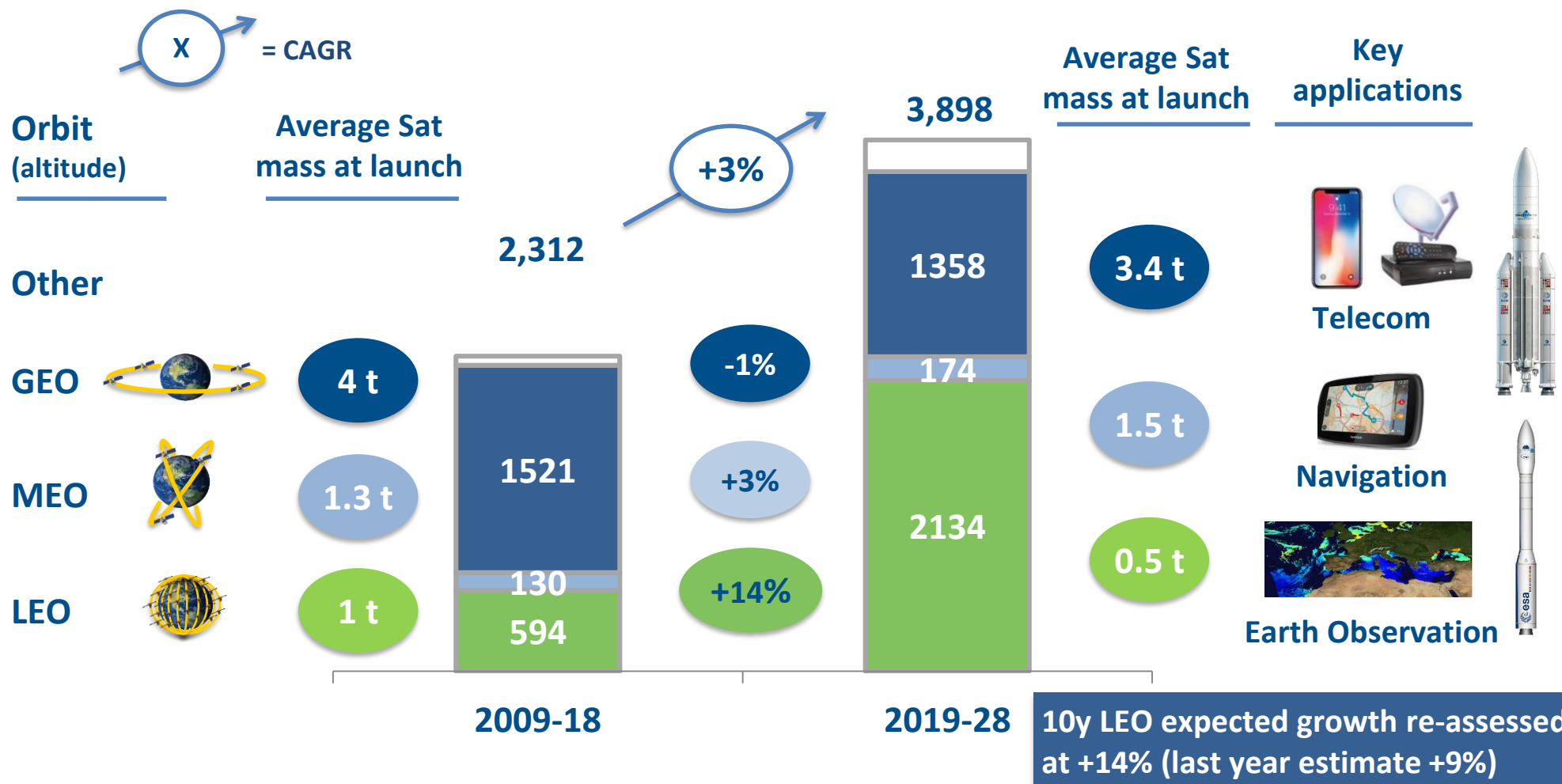




# For the next decade: stable launch demand in MEO-GEO, fast-growing in LEO

## World Market

### World total mass at launch (tons)

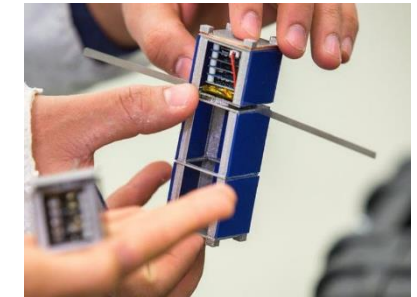
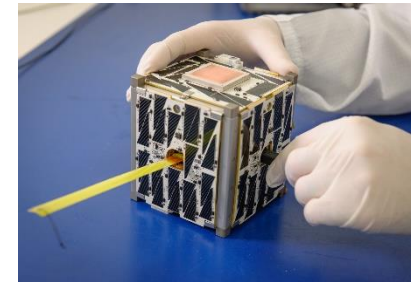
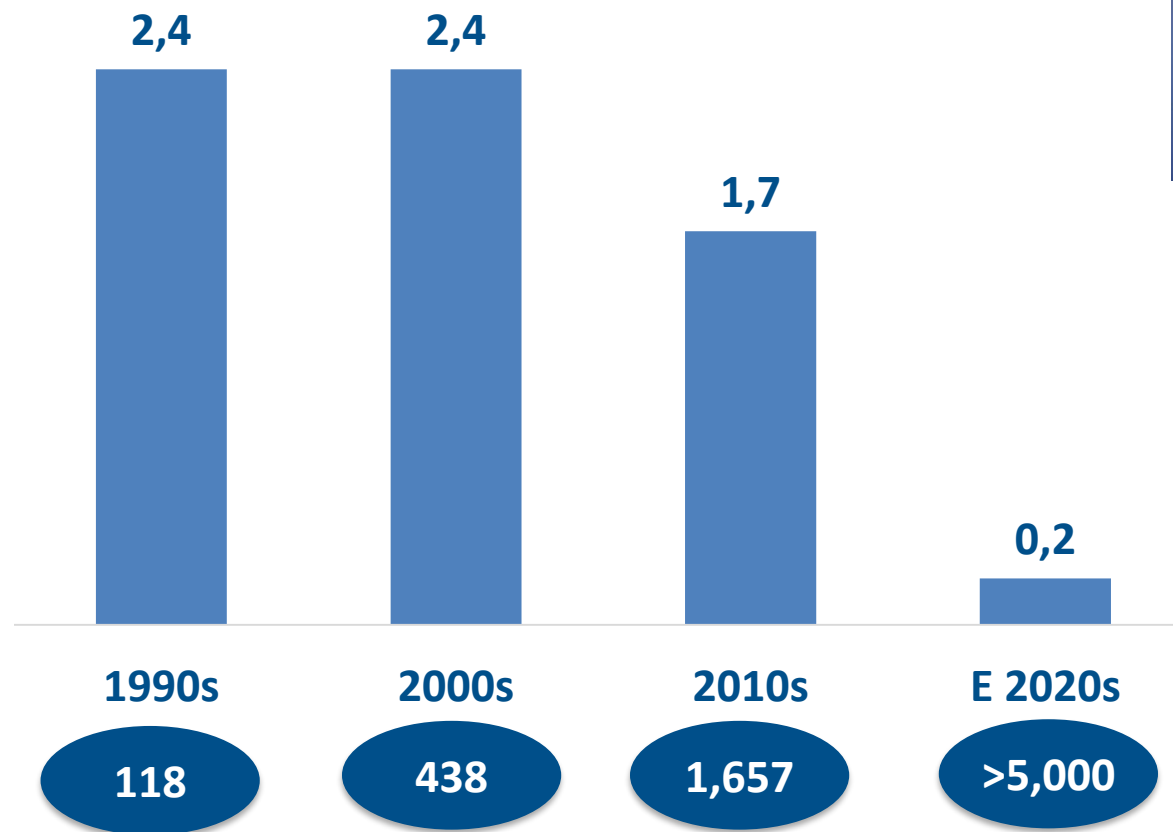




# Satellite mass is shrinking quickly



## Average satellite mass (tons)



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# Avio : a pure player in Space Launchers



- 400 M€ revenues (15% CAGR 2014-18)
- 1.000 employees
- 400 M€ Mkt Cap
- 70% free float
- 4% Mgmt share



NEW 2020

Ariane 6

Vega C

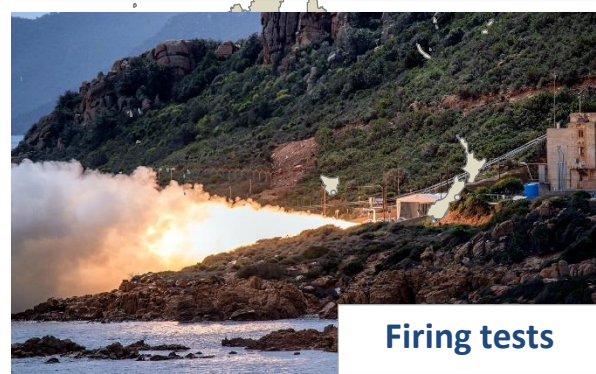
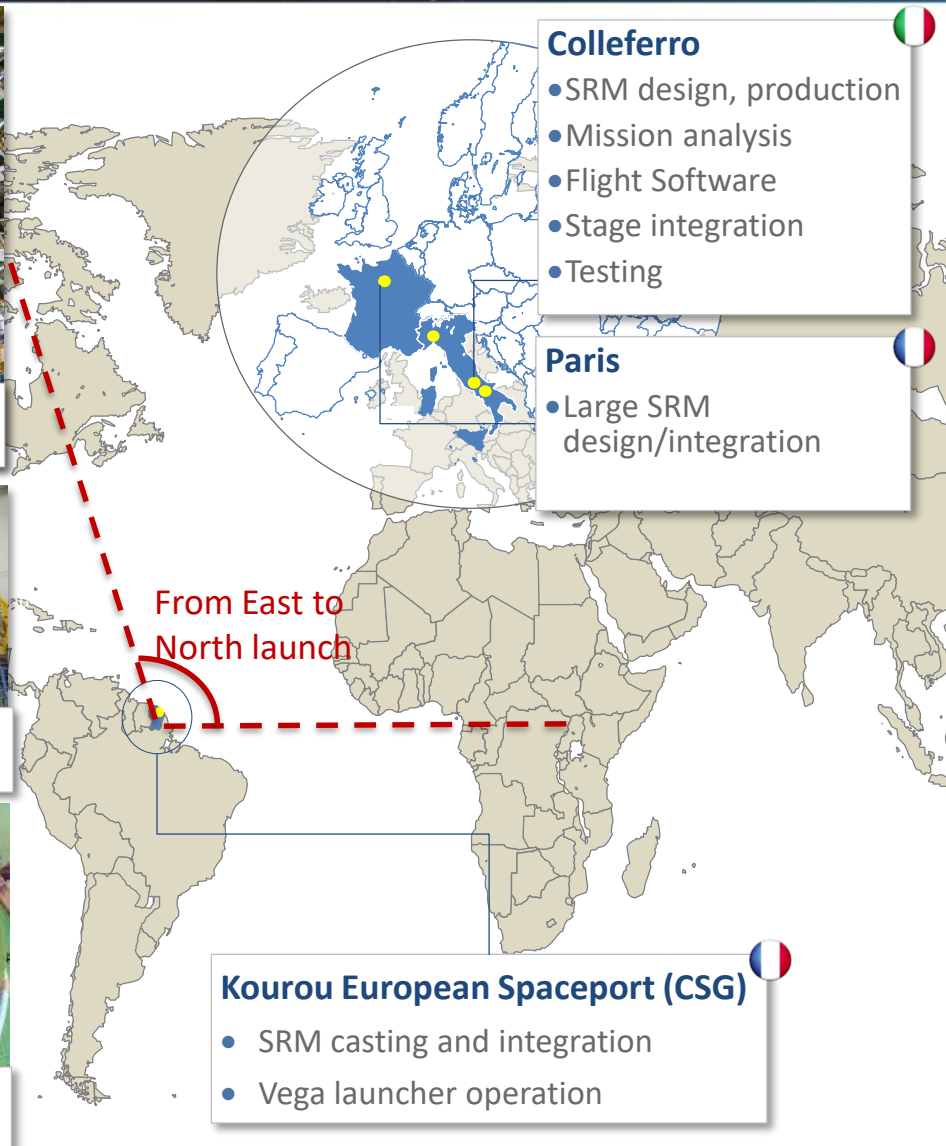
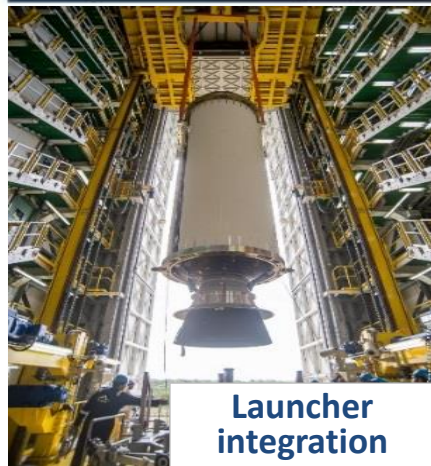


- European heavy launcher (10.5 tons in GTO)
- Avio: partner and supplier for strap-on boosters

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



# Industrial operations in Europe and French Guyana



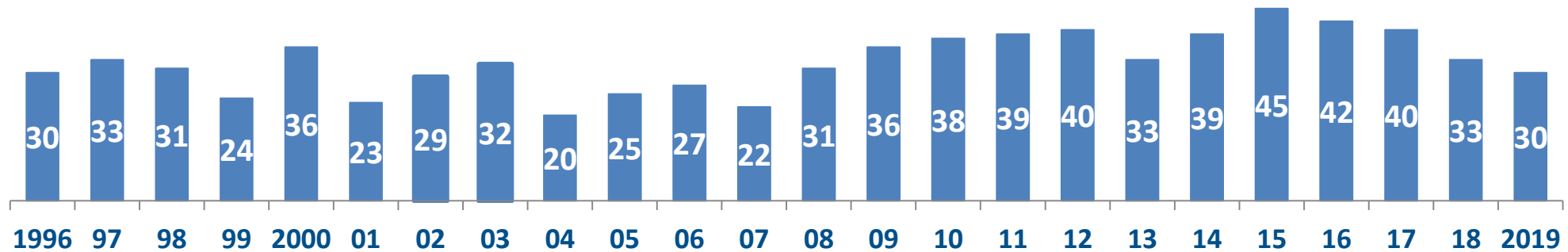


# Ariane 5: the workhorse for Geostationary Satellites

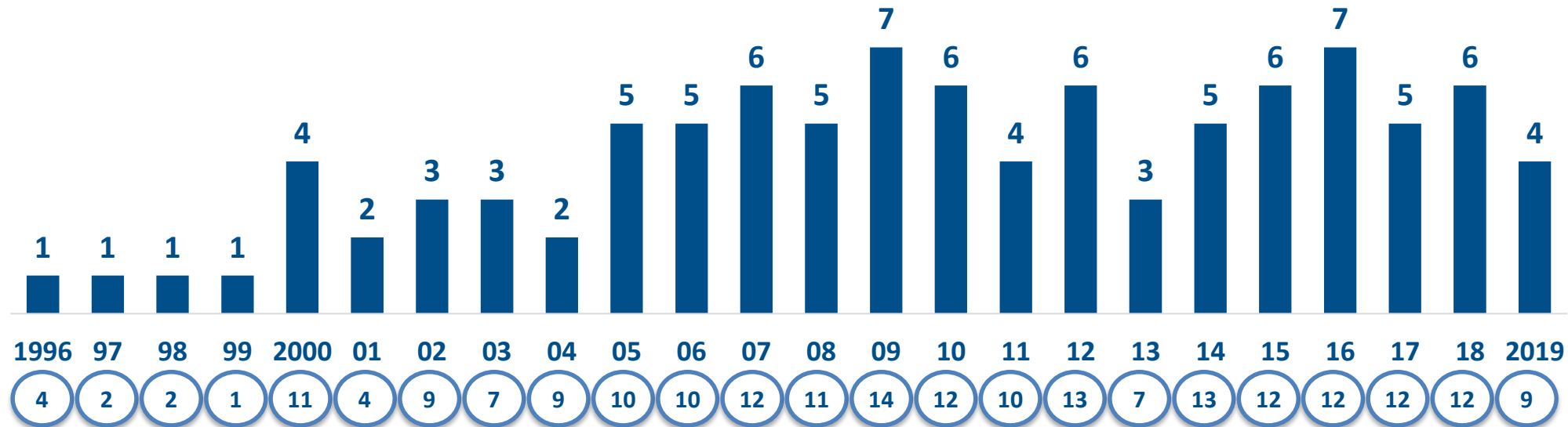


Total # of satellites launched into GTO worldwide

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

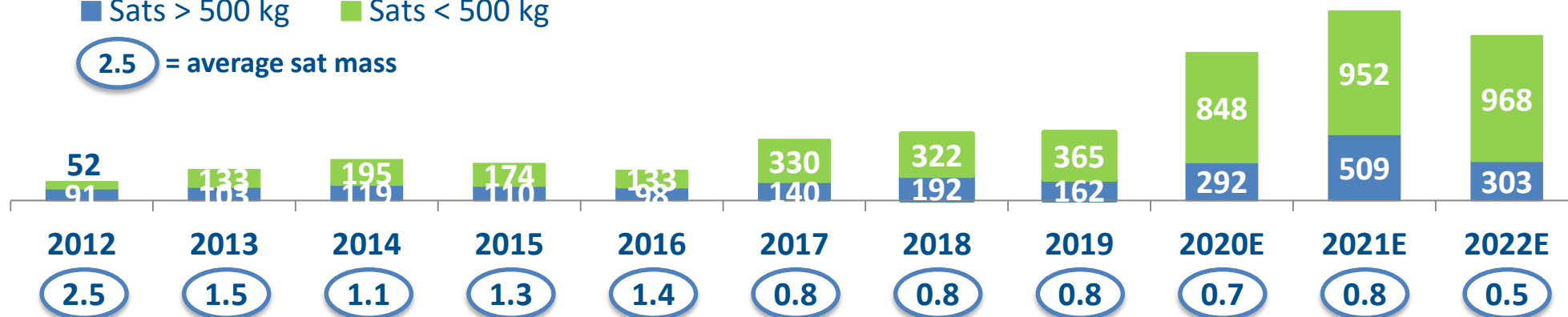
# With the Sat miniaturization trend, Vega is ready to increase launch cadence to perform 5 flights per year



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)

5

4

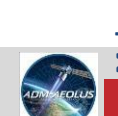
3

2

1

0

Cube sats



2012

2013

2014

2015

2016

2017

2018

2019

2020

2021

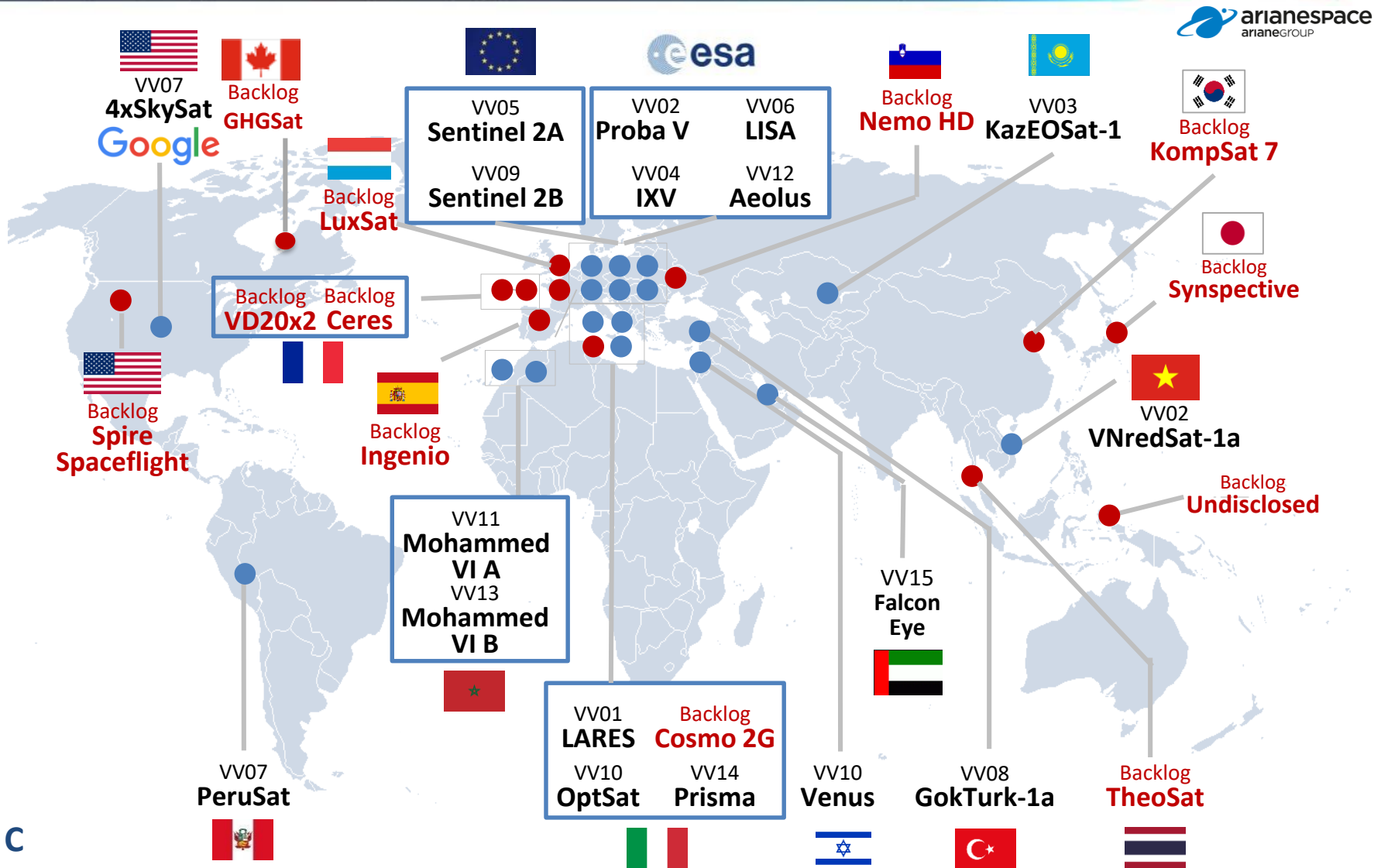
2022



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



● = Backlog  
● = Flights



# European Launcher capabilities evolving to better meet market demand



Today

Tomorrow\*

1.5 Tons  
LEO

>3 Tons  
MEO

10.5 Tons  
GEO

2.3 Tons  
LEO

>5 Tons in  
LEO/MEO/GEO

10.5 Tons  
GEO

➔  
*Broader  
product range*

➔  
*Lower  
costs*

➔  
*More  
flexibility*

P80



Vega



Soyuz  
(Licensed)

P230



Ariane 5

P120



Vega C



Ariane 6.2

P120



Ariane 6.4



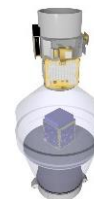
Vega  
Dual Payload



Fregat  
Adapter



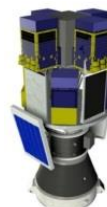
Ariane 5  
Dual Payload



Vega C  
Dual  
Payload



Vega  
Piggyback



Vega  
SSMS  
Rideshare



Ariane 6  
Rideshare



Ariane 6  
Dual  
Payload

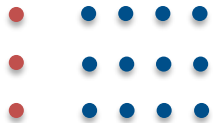


# Automation and standardization to increase cost competitiveness



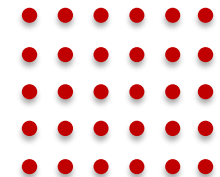
Vega Ariane 5

P80 P230



Vega C Ariane 62 Ariane 64

P120



*Single main-stage, higher volumes, economies of scale*

*First flight items  
production*

*Vega C MF  
Ariane 6 MF*

*P120 Full volume  
production*



# Agenda

- The Space launcher business
- Avio's positioning and evolution
- **Recent updates**
- Financials

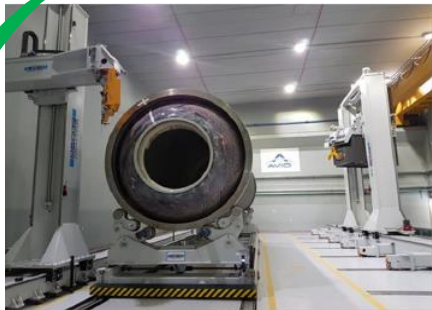
# Good progress on VV16 manufacturing to support Vega's return to flight by March 2020



**Z23 ITP Vulcanization**



**Z23 Filament winding completion**



**Z23 IMC X-Ray inspection**



**Z23 ITP application**



**Z23 IMC Proof testing**

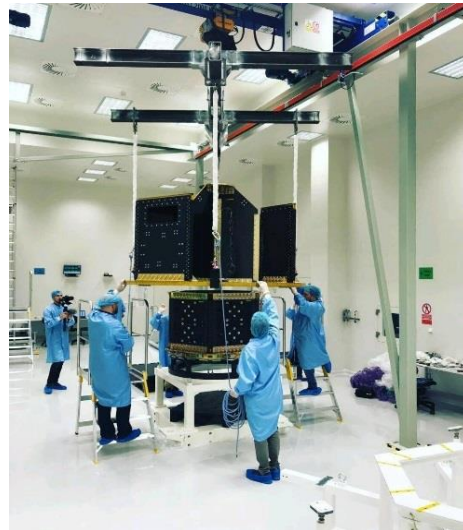
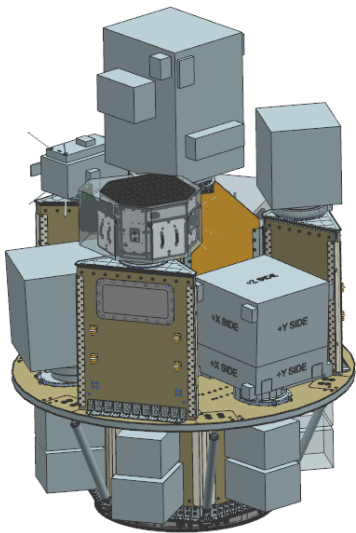
- The Independent Enquiry Commission (IEC) work has come to a conclusion
- Recommendations have been established for corrective actions
- The IEC considers that a rigorous implementation of these recommendations will allow a safe return to flight
- Implementation of recommendations is well underway at Avio for flight by 1Q 2020



# SSMS : the Avio breakthrough solution to capture the fastest growing demand segment of smallsats

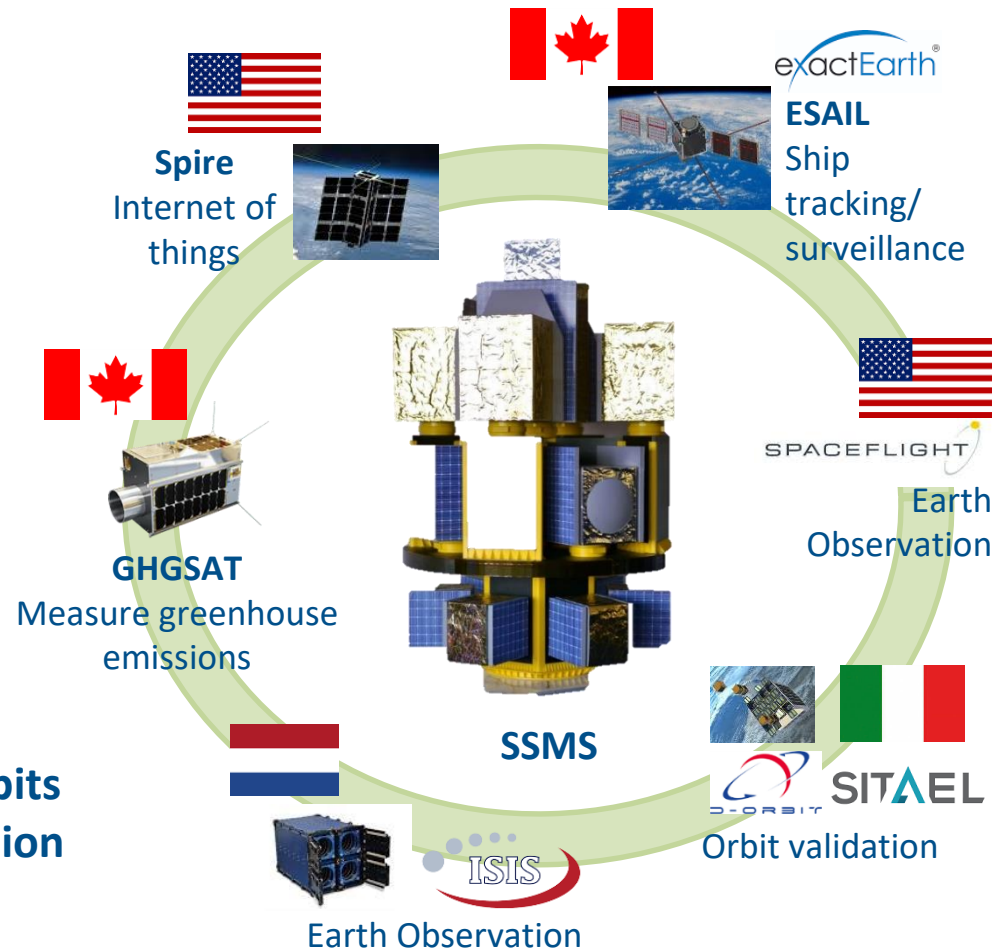


SSMS Integration completed



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

1<sup>st</sup> Vega SSMS rideshare flight - fully booked with 44 Satellites

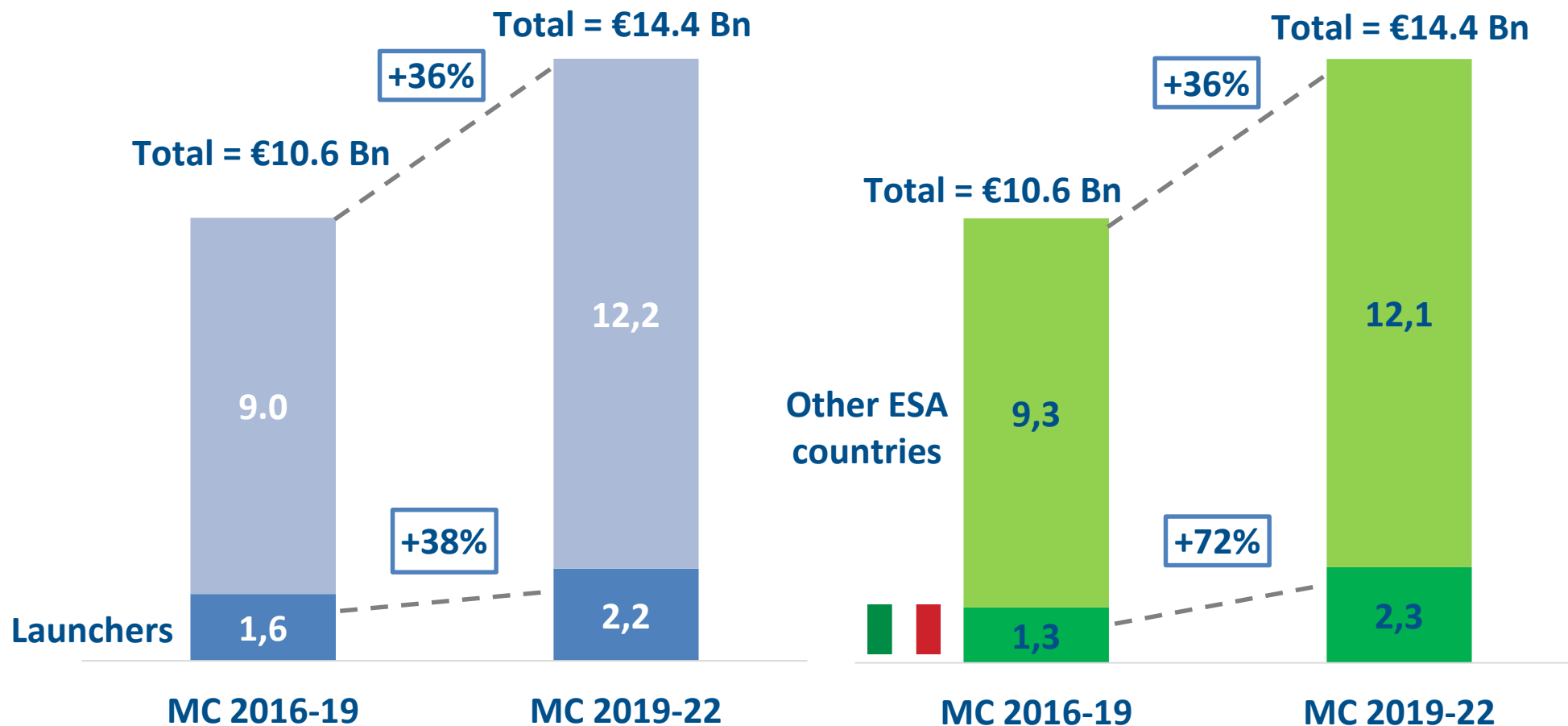




# Positive outcome of the 2019 ESA Ministerial Council



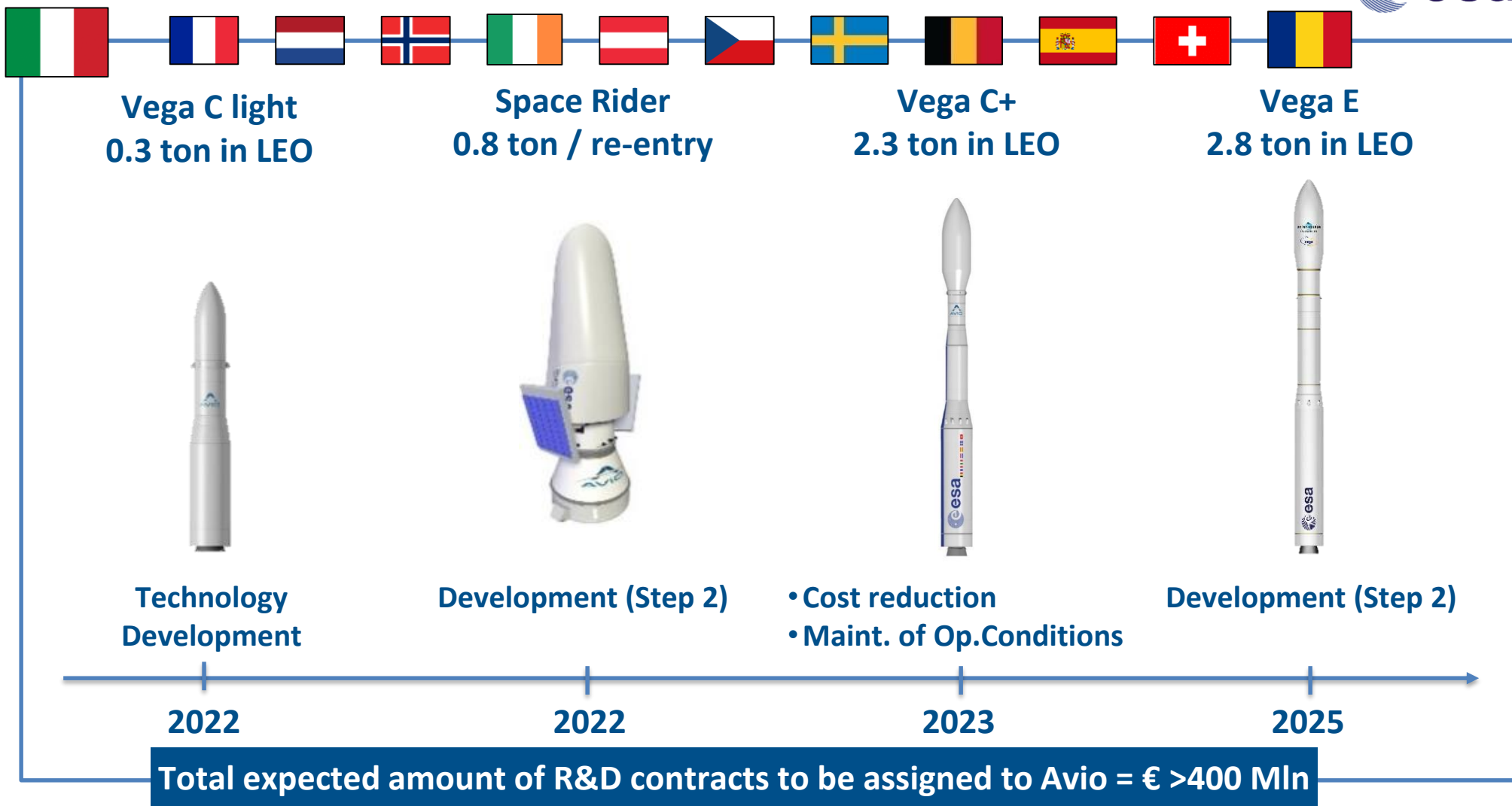
## ESA Ministerial Council Subscriptions



# Positive outlook for the evolution of Vega programs



## Key ESA Space transportation programs under Italian leadership



# Vega C getting ready for Maiden Flight by 1<sup>st</sup> semester 2020



## Sub-systems readiness

## System-level tests

FAIRING

AVUM

Z9

IS2/3

Z40

IS1/2

P120



Fairing



Vampire adapter



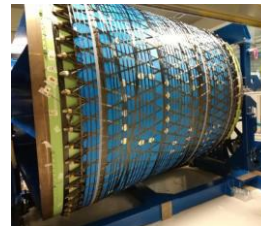
New prop. tanks



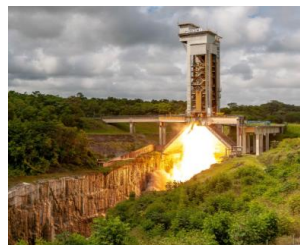
AVUM new gas tank



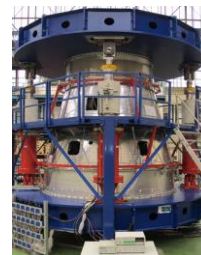
Z40 Firing Test (May)



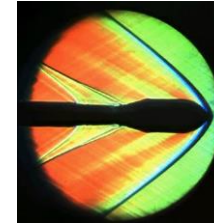
IS2/3



P120 Firing Test (Jan. '19)



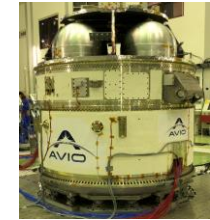
IS1/2



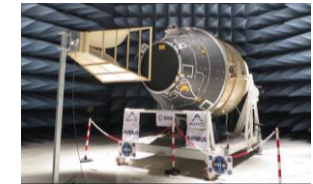
Wind Tunnel Test



HWIL tests



Vibration tests



UCEMC test



A2 Assy test



UCMEC tests

## New facilities



P120 BBP



P120 BIP Extension



# Ariane 6 getting ready for Maiden Flight by end of 2020



FAIRING

VINCI

VULCAIN



Ariane 6 Fairing Shell completed (Jun.)



Ariane 6 launch vehicle building under way



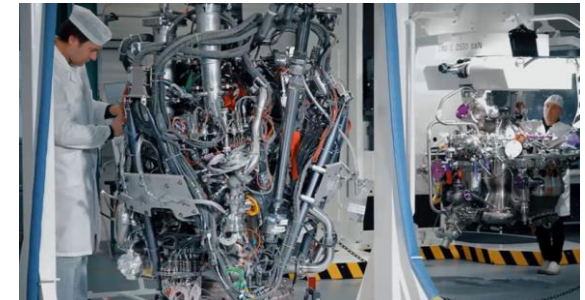
Ariane 6 mobile gantry in construction



Vulcain 3 Firing Test (Jul.)



Upper Stage Tanks' Integ. (Jul.)



Vinci Engine Qualification Test (Oct.)

4xP120



P120 Firing Test (Jan. '19)



Ariane 6 P120 Rear Skirt Integ. (Aug.)



Ariane 6 Launch Pad almost ready



# 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**
- **Full-scale combustion chamber test article** manufactured and **shipped to NASA facilities in USA**
- Full-scale model expected to be tested by **NASA in 1Q 2020**

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



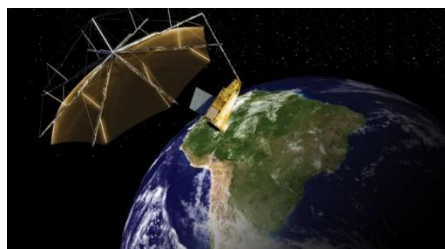
## Vega

### 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**



SOURCE: ESA, Arianespace, Press search  
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## Ariane

### Galileo constellation

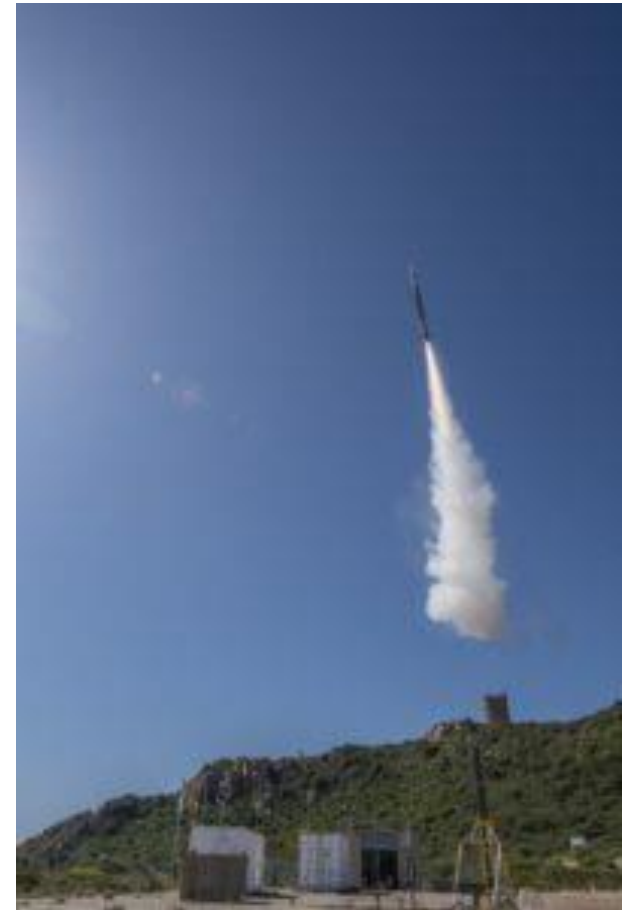
- European Union constellation of navigation satellites for **EU citizens and enterprises**
- Weight per sat: **0.7 tons**
- Orbit: **MEO @23,616 Km**
- Launch vehicle: **Ariane 62**
- Current number of scheduled flights with Ariane 62: **6, with 4 additional sats announced on January 2020**
- Launch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



# 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



# Agenda

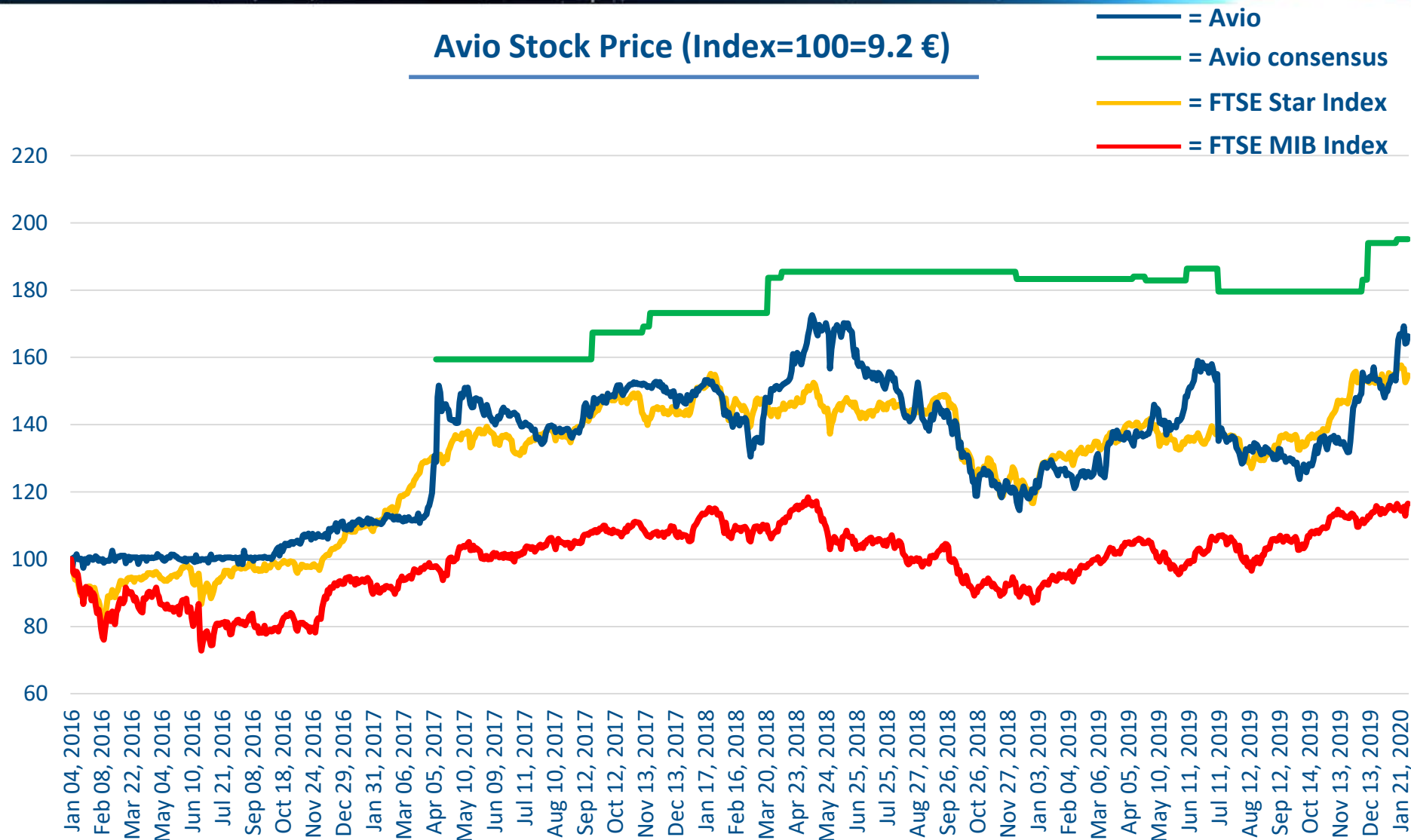
- The Space launcher business
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# Avio stock price vs Consensus Target Price



Avio Stock Price (Index=100=9.2 €)



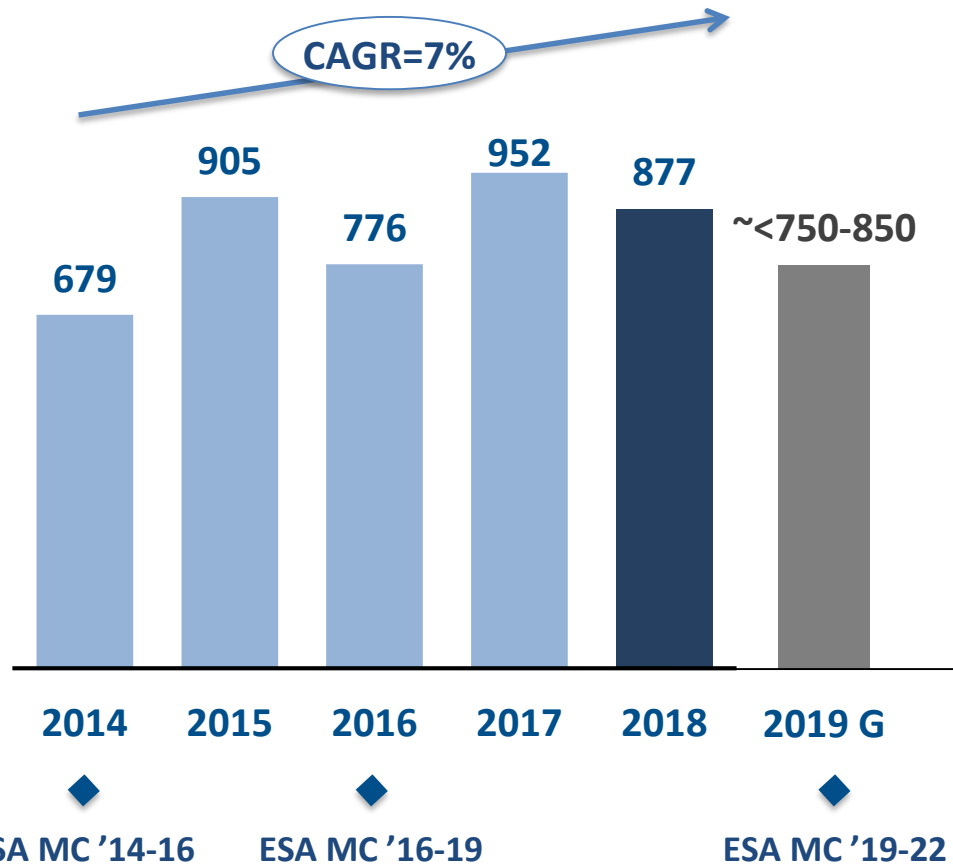
Source: Borsa Italiana

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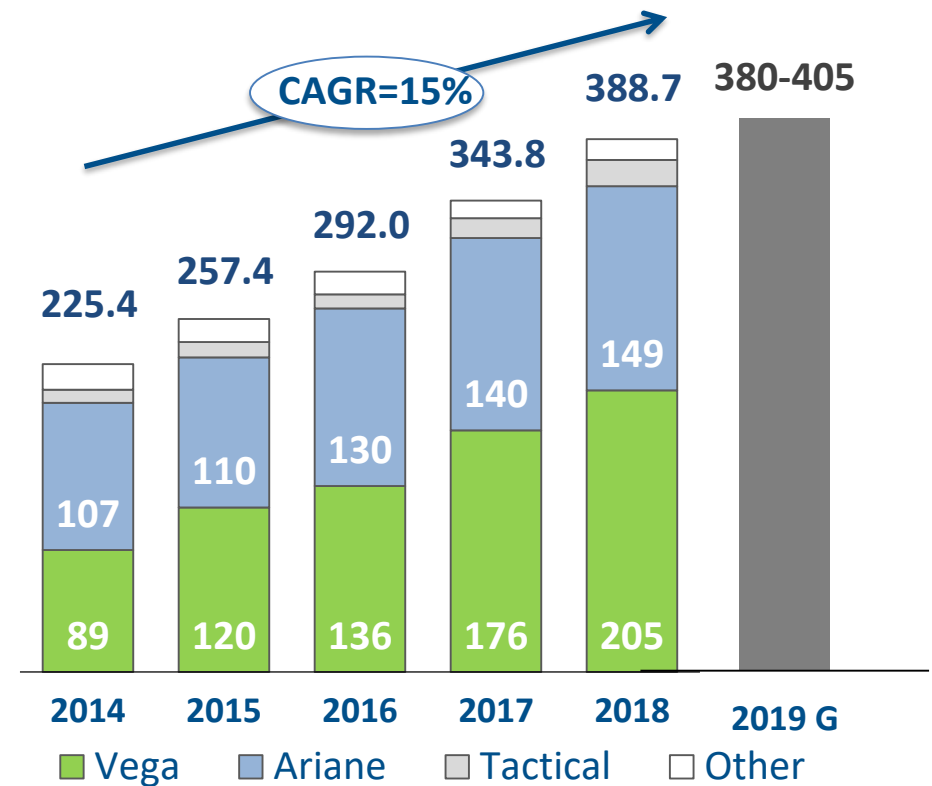
# Net Order Backlog and Revenues



## Net Order Backlog Evolution (€ - M)



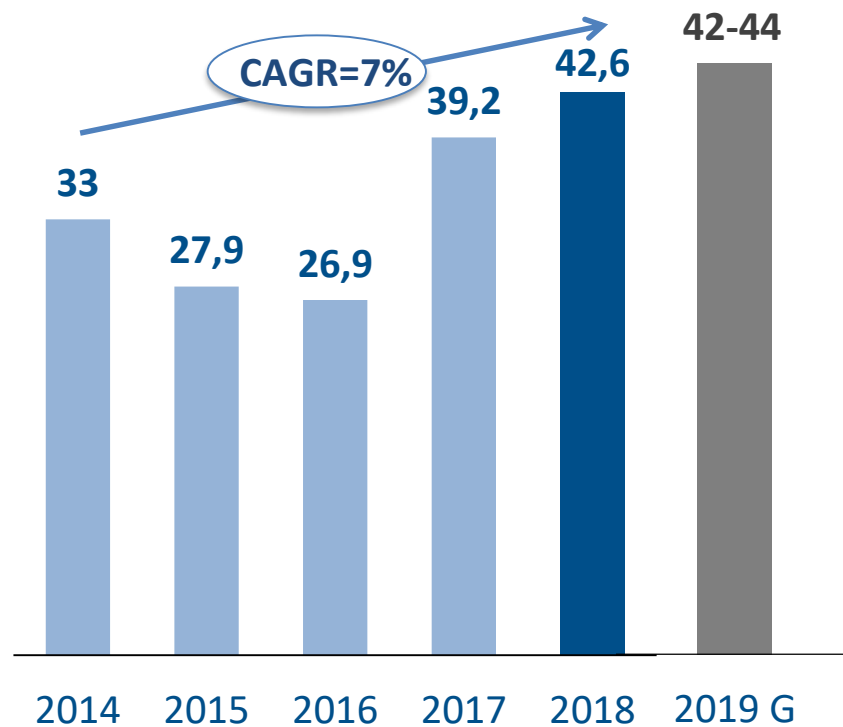
## Revenues by Line of Business (€ - M)



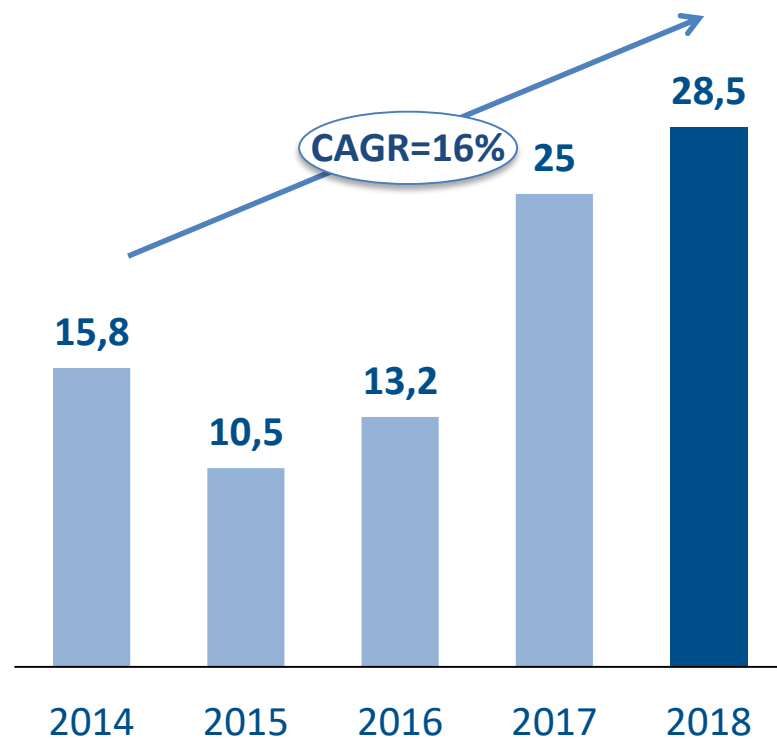
# EBITDA and EBIT growing – High operating leverage



EBITDA (€ - M)



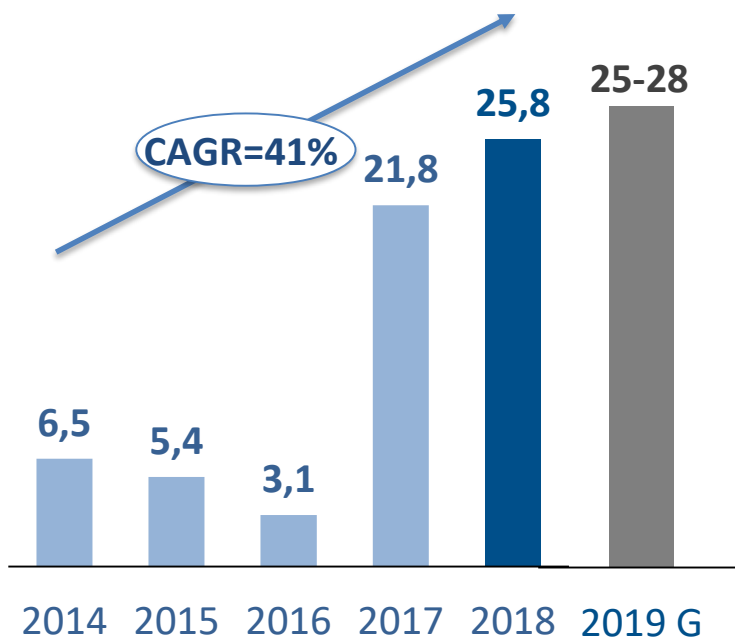
EBIT (€ - M)



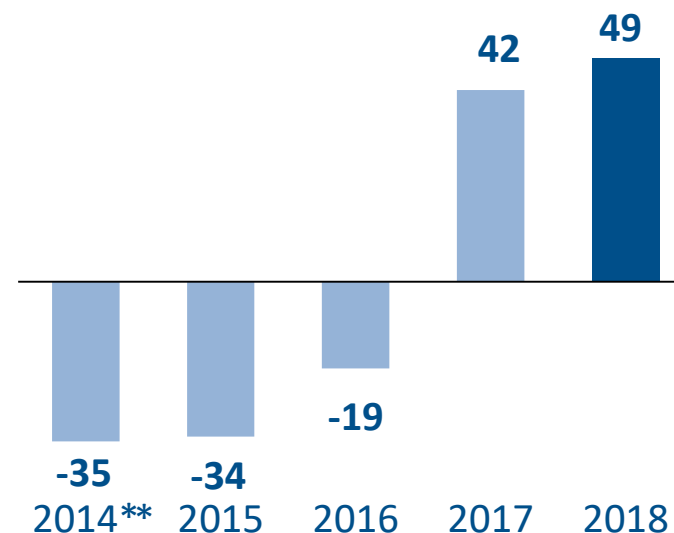
# Growing Earnings and Cash supporting dividends and capex



Net Income (€ - M)



Net Financial Position (€ - M)



Dividends  
(€ - M)

-      220\*      -      10      11.5

CAPEX  
(€ - M)

17      14      25      29      23

**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



# 9M 2019 economic and financial highlights



| 9M 2018<br>ACTUAL     | MAIN ECONOMICS/<br>FINANCIALS               | 9M 2019<br>ACTUAL     | Delta | Delta | Comments   |
|-----------------------|---|-----------------------|-------|-------|--|
| € - M                 |   | € - M                 | € - M | %     |  |
| 261.5                 | NET REVENUES                                | 270.3                 | 8.8   | 3%    | <ul style="list-style-type: none"> <li>• Growth in Vega development</li> <li>• Higher depreciation expenses (including IFRS 16)</li> <li>• Non-recurring costs reduced by 20% vs 2018</li> </ul> |
| 22.5<br>8.6%          | EBITDA REPORTED<br><i>% on net revenues</i> | 23.5<br>8.7%          | 1.0   | 5%    |  |
| 24.9<br>9.5%          | EBITDA ADJUSTED<br><i>% on net revenues</i> | 25.4<br>9.4%          | 0.5   | 2%    |  |
| 12.3<br>4.7%          | EBIT REPORTED<br><i>% on net revenues</i>   | 11.7<br>4.5%          | (0.5) | -4%   |  |
| 14.6<br>5.6%          | EBIT ADJUSTED<br><i>% on net revenues</i>   | 13.6<br>5.2%          | (1.0) | -7%   |  |
| 31 DEC 2018<br>ACTUAL |   | 30 SEP 2019<br>ACTUAL | Delta | Delta |  |
| € - M                 |   | € - M                 | € - M | %     |  |
| 49.1                  | NET FINANCIAL POSITION                      | 49.3                  | 0.2   | 0%    | <ul style="list-style-type: none"> <li>• 30 Sep 19 NFP in line with Dec 18 following typical seasonality (including IFRS 16)</li> </ul>  |

# Update on 2019 progress : guidance confirmed



- Order backlog slightly lower than anticipated (but only due to timing)
  - Full Ariane 6 production order to be completed after year-end
  - Other smaller orders also slipping towards beginning of 2020 but coming
- Revenues close to guidance
  - Progress on production and development activities partially slowed down by unforeseen work conducted for VV15 investigation activities
  - Catchup expected in 2020 upon completion of key milestones
- EBITDA / EBIT guidance confirmed
- Net income guidance confirmed
  - Positive upside from better than anticipated balance of financial expenses/income
- VV15 impact balanced with ESA program devoted to treatment of flight anomalies