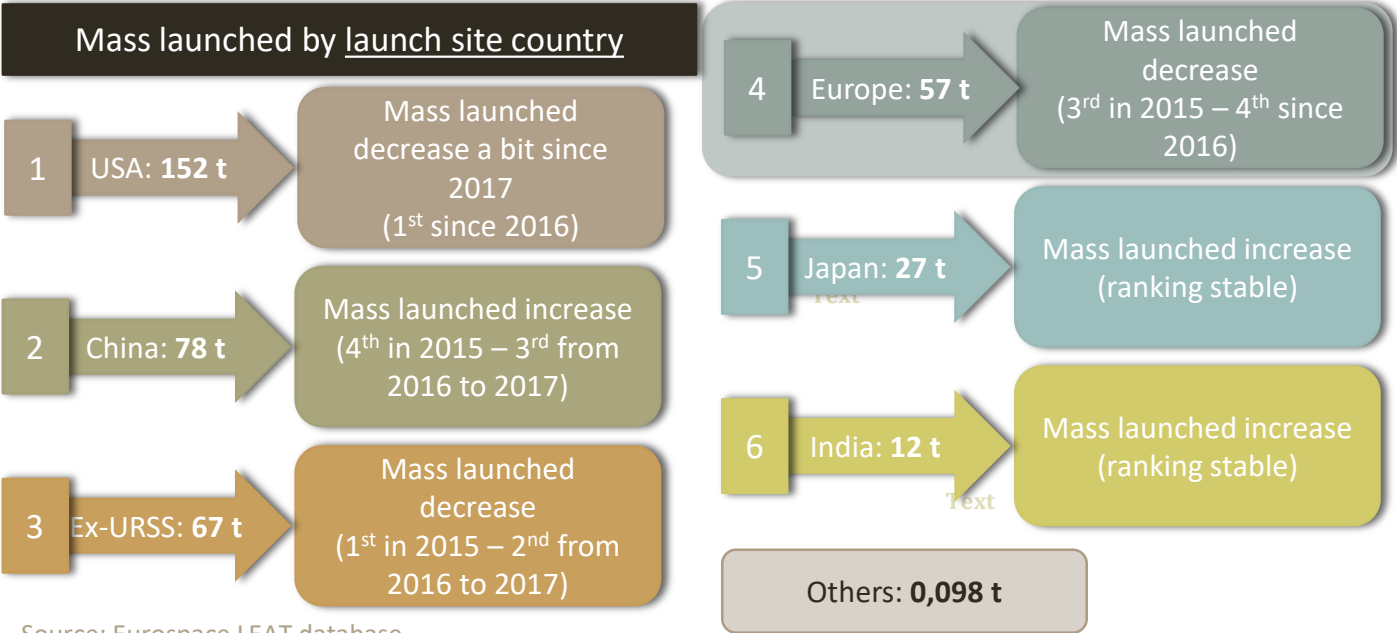# Challenges and Trends for the Space Sector

Pierre Lionnet – Research Director

PUTTING EUROPE IN THE GLOBAL (SPACE) CONTEXT

Global Space Activities 2018

Total mass launched in 2018: **392,8 t**
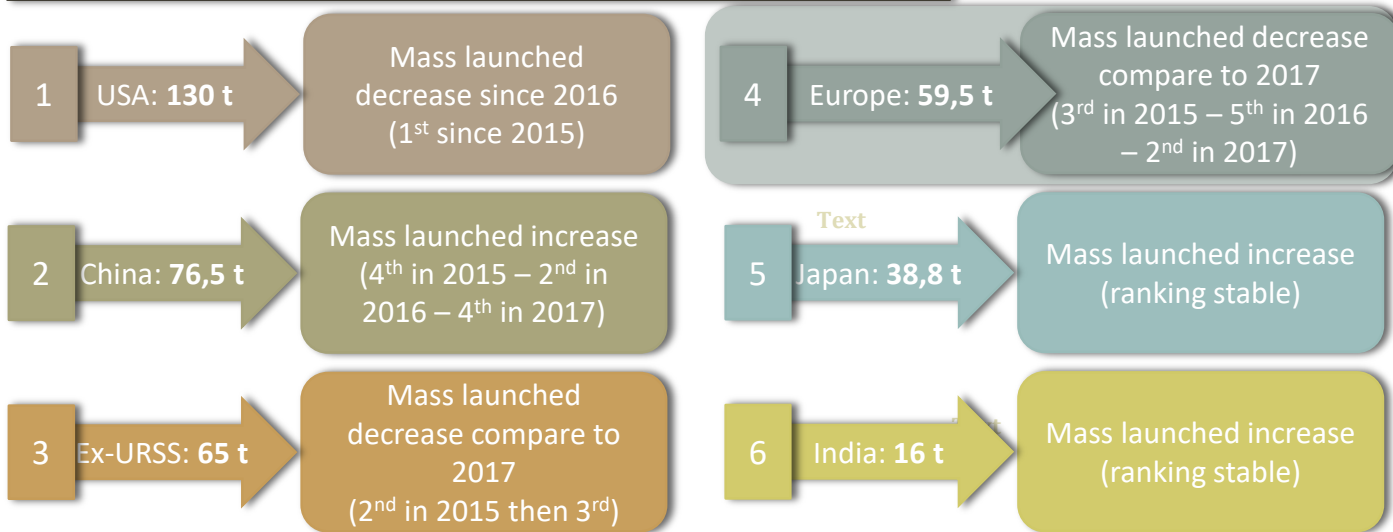(in line with annual averages of the decade)

Mass launched by launch site country

1 | USA: **152 t** → Mass launched decrease a bit since 2017
(1st since 2016)

2 | China: **78 t** → Mass launched increase
(4th in 2015 – 3rd from 2016 to 2017)

3 | Ex-URSS: **67 t** → Mass launched decrease
(1st in 2015 – 2nd from 2016 to 2017)

4 | Europe: **57 t** → Mass launched decrease
(3rd in 2015 – 4th since 2016)

5 | Japan: **27 t** → Mass launched increase
(ranking stable)

6 | India: **12 t** → Mass launched increase
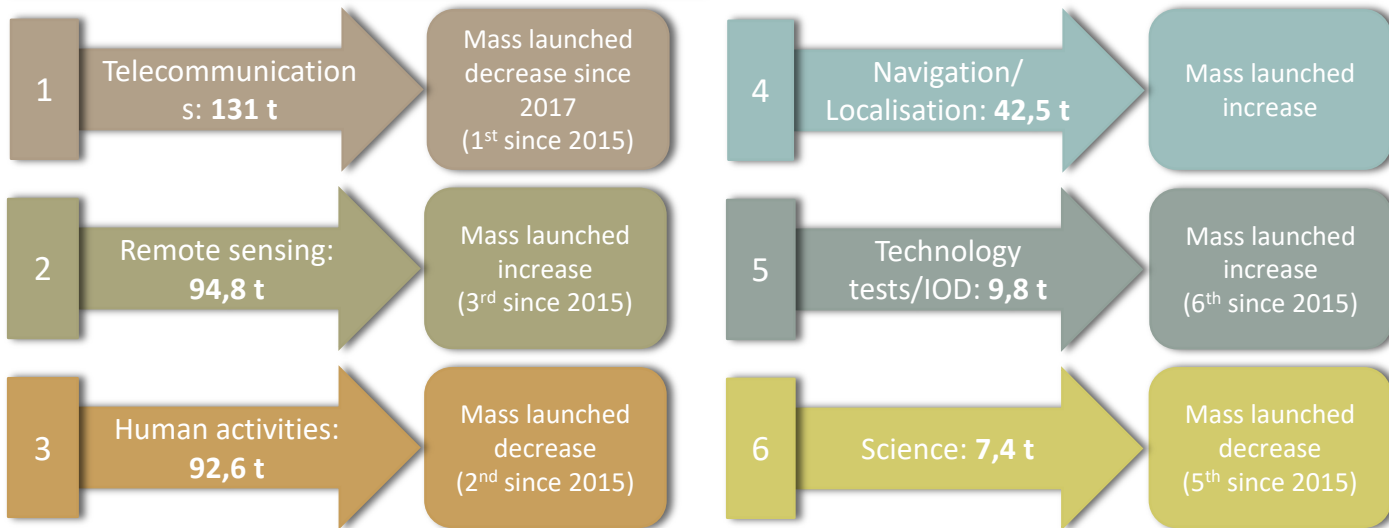(ranking stable)

Others: **0,098 t**

Source: Eurospace LEAT database

Global Space Activities 2018

Total mass launched in 2018: **392,8 t**
(in line with annual averages of the decade)

Spacecraft mass launched by <u>SC manufacturer country</u>

1	USA: **130 t**	Mass launched decrease since 2016 (1st since 2015)

4	Europe: **59,5 t**	Mass launched decrease compare to 2017 (3rd in 2015 – 5th in 2016 – 2nd in 2017)

2	China: **76,5 t**	Mass launched increase (4th in 2015 – 2nd in 2016 – 4th in 2017)

5	Japan: **38,8 t**	Mass launched increase (ranking stable)

3	Ex-URSS: **65 t**	Mass launched decrease compare to 2017 (2nd in 2015 then 3rd)

6	India: **16 t**	Mass launched increase (ranking stable)

Source: Eurospace LEAT database

Global Space Activities 2018

Total mass launched in 2018: **392,8 t**
(in line with annual averages of the decade)

Spacecraft mass launched by <u>mission</u>

1	Telecommunications: **131 t**	Mass launched decrease since 2017 (1st since 2015)
2	Remote sensing: **94,8 t**	Mass launched increase (3rd since 2015)
3	Human activities: **92,6 t**	Mass launched decrease (2nd since 2015)
4	Navigation/ Localisation: **42,5 t**	Mass launched increase
5	Technology tests/IOD: **9,8 t**	Mass launched increase (6th since 2015)
6	Science: **7,4 t**	Mass launched decrease (5th since 2015)

Source: Eurospace LEAT database

CHALLENGES AND COMPETITIVENESS DRIVERS

Key trends affecting the sector

Acceleration of change, faster obsolescence, short product life cycle
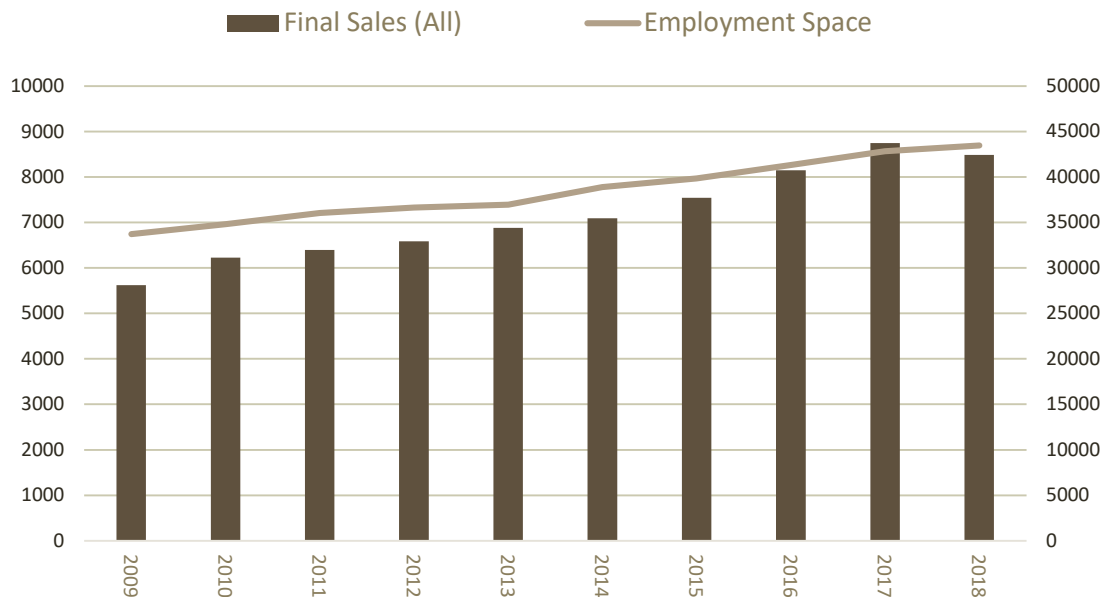
Newspace and the GAFA, new funding models, new markets and applications

Data driven society and economy

Reducing cost of access to space, and developing in-space transportation

Space sector

Satcom shifting markets, flexibility, processing, 5G, digital divide…

Compactness of space systems, miniaturisation, functionalised materials, very high processing power…

Digital transformation, AI, new manufacturing techniques, mass production

THE EUROPEAN SPACE INDUSTRY IN 2018

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European space industry sales & employment

Direct industry employment in 2018: **43 450 FTE**

Final sales worth in 2018: **8 480 M€**

European Space Industry Sales (Current M€ - Left) & Employment (FTE- Right)

■ Final Sales (All) ■ Employment Space

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European space industry sales by main customer segment
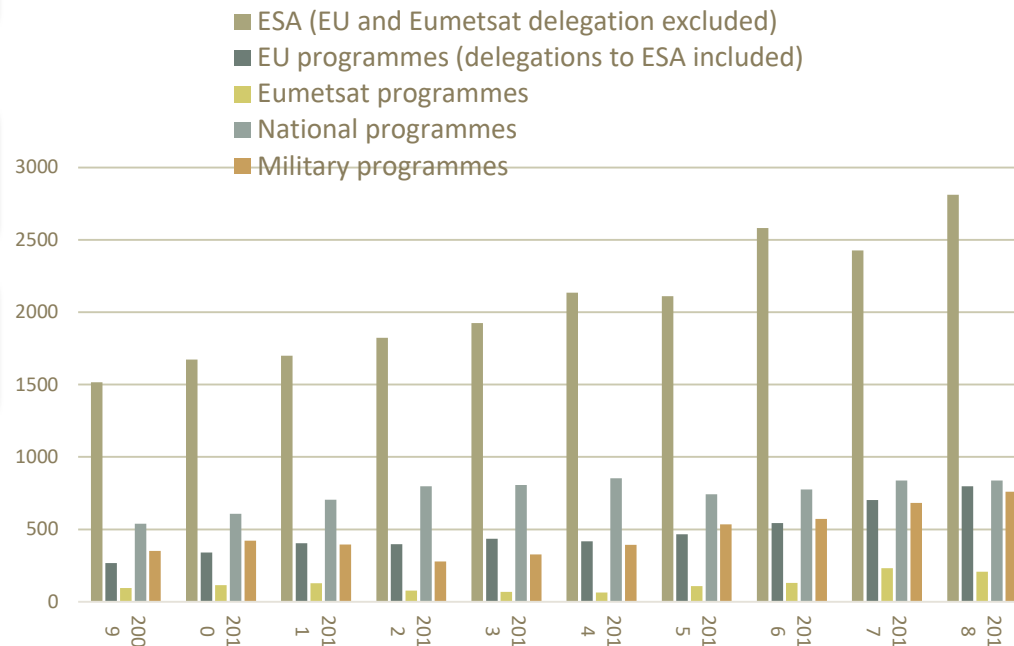
Final sales to Europe institutional in 2018: 5.4 B€

Final sales commercial Europe + export in 2018: 3 B€

European Space Industry Sales by Main Customer Segment (Current M€)

Legend:
— Final sales to Europe institutional
— Final sales commercial Europe + export
— Other & unknown final sales

Y-axis: 0, 1.000, 2.000, 3.000, 4.000, 5.000, 6.000

X-axis: 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018

Source: Eurospace facts & figures 2019 edition
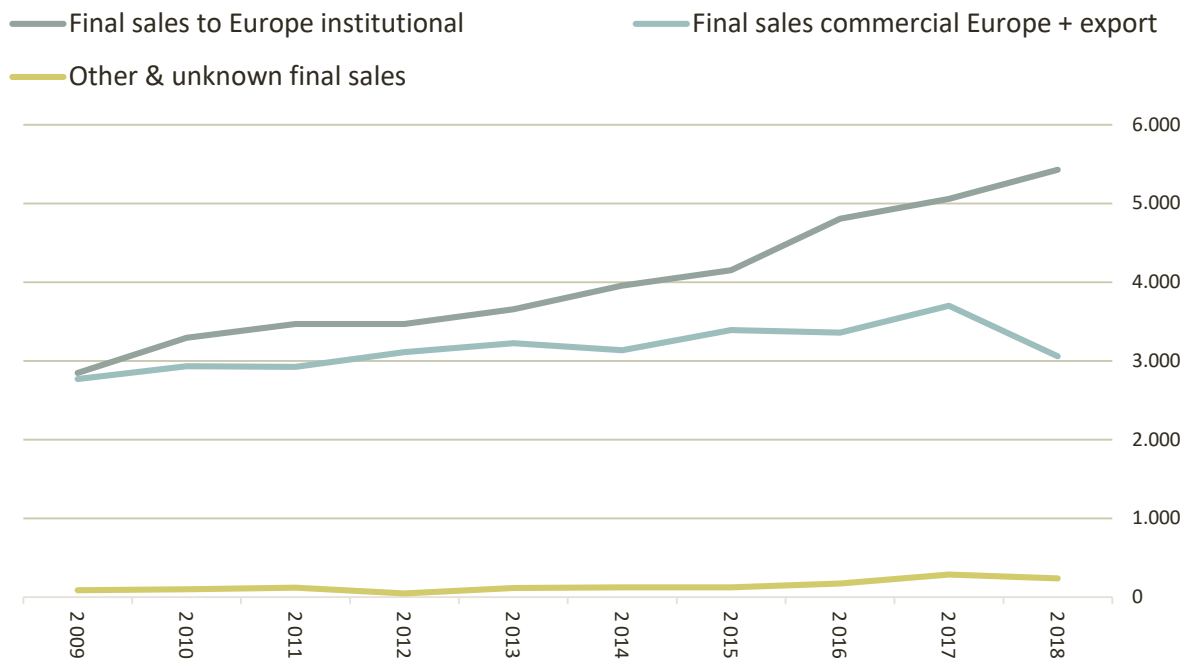
European space industry sales: Institutional Programmes

Final sales to Europe institutional in 2018: 5,4 B€

ESA programme: 2 800 M€

National Military programme: 760 M€

National Civil programme: 840 M€

Eumetsat programme: 210 M€

EU programme: 800 M€

European Space Industry Sales (Current M€) - Institutional Programmes

- ESA (EU and Eumetsat delegation excluded)
- EU programmes (delegations to ESA included)
- Eumetsat programmes
- National programmes
- Military programmes

European space industry sales: Commercial systems

Commercial systems: Europe + export (Current M€)

Final sales commercial Europe + export in 2018: **3 060 M€**
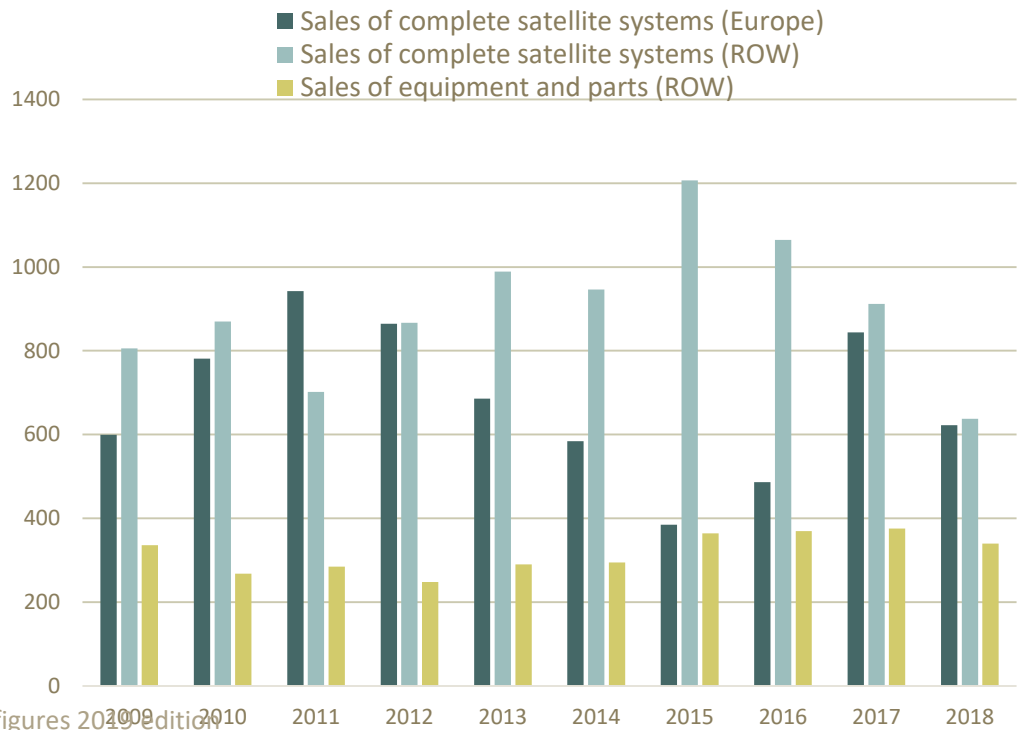
Launcher systems: **930 M€**

Spacecraft systems: **2 100 M€**

Legend: ■ Launcher systems   ■ Spacecraft systems

(Years: 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018; Y-axis: 0 to 3000)

European space industry sales: Commercial spacecraft market by customer segment

Customer segment:
Commercial spacecraft market in 2018

↓

Complete satellite system -
Europe: 620 M€

Complete satellite systems -
**ROW:
630 M€**

Equipment and parts - **ROW:
340 M€**

European Space Industry Sales – Commercial Spacecraft Market by Customer Segment (Current M€)

- ■ Sales of complete satellite systems (Europe)
- ■ Sales of complete satellite systems (ROW)
- ■ Sales of equipment and parts (ROW)
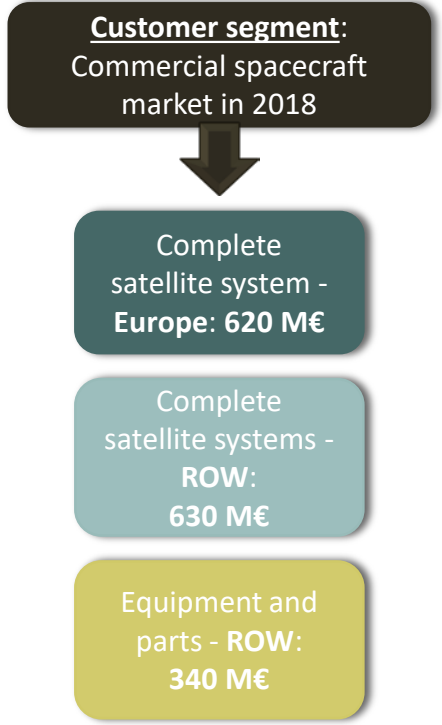
Source: Eurospace facts & figures 2019 edition

European space industry sales: Commercial spacecraft market by product segment

European Space Industry Sales – Commercial Spacecraft Market by Product Segment (Current M€)
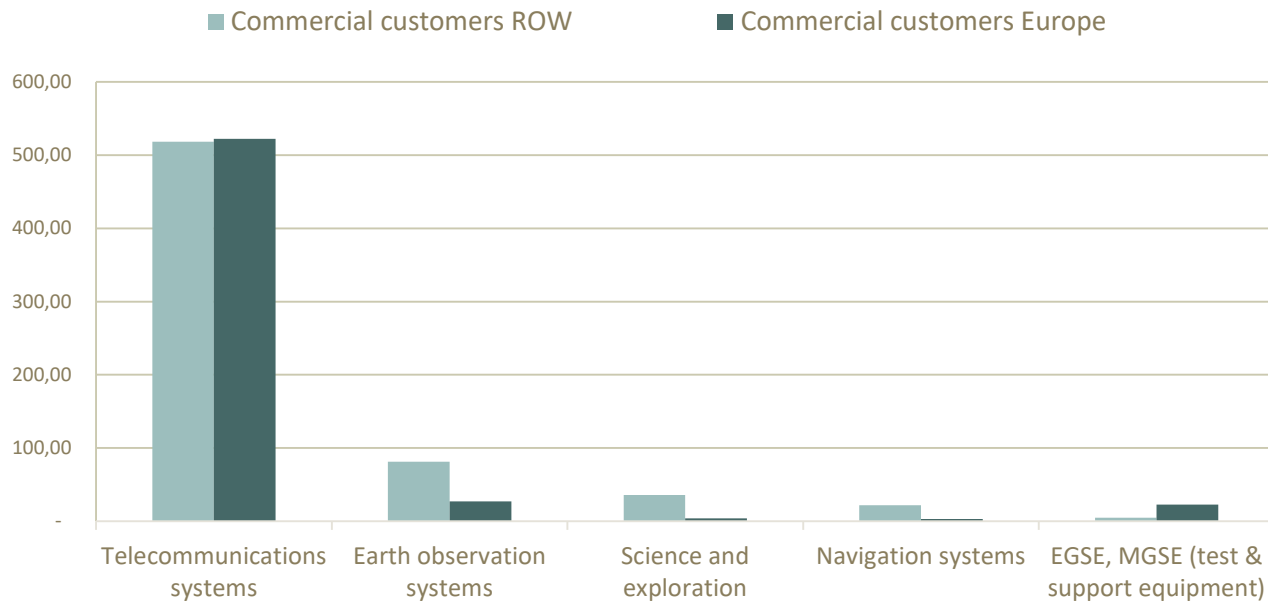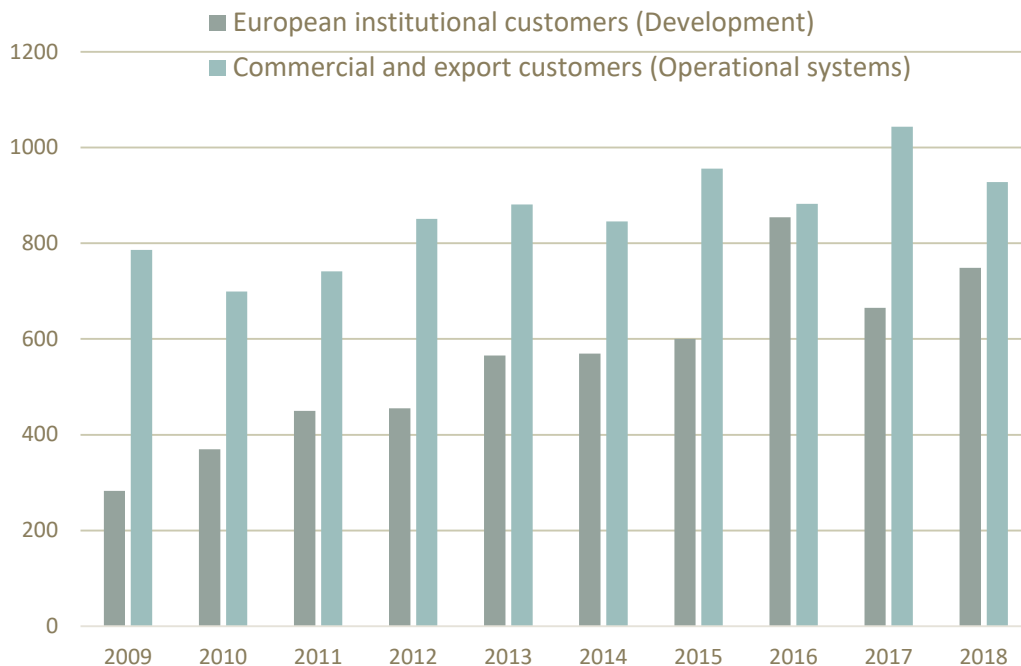
Launcher system sales by customer segment

Customer segment:
Launcher system sales in 2018

European institutional:
750 M€

Commercial and export :
930 M€

Launcher System Sales by Customer Segment (Current M€)

■ European institutional customers (Development)
■ Commercial and export customers (Operational systems)

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Mass launched by Vega and Ariane 5 by customer segment

Mass launched by Vega and Ariane 5 (in kg)

■ Europe institutional customers   ■ Commercial and exports

Source: Eurospace LEAT Database