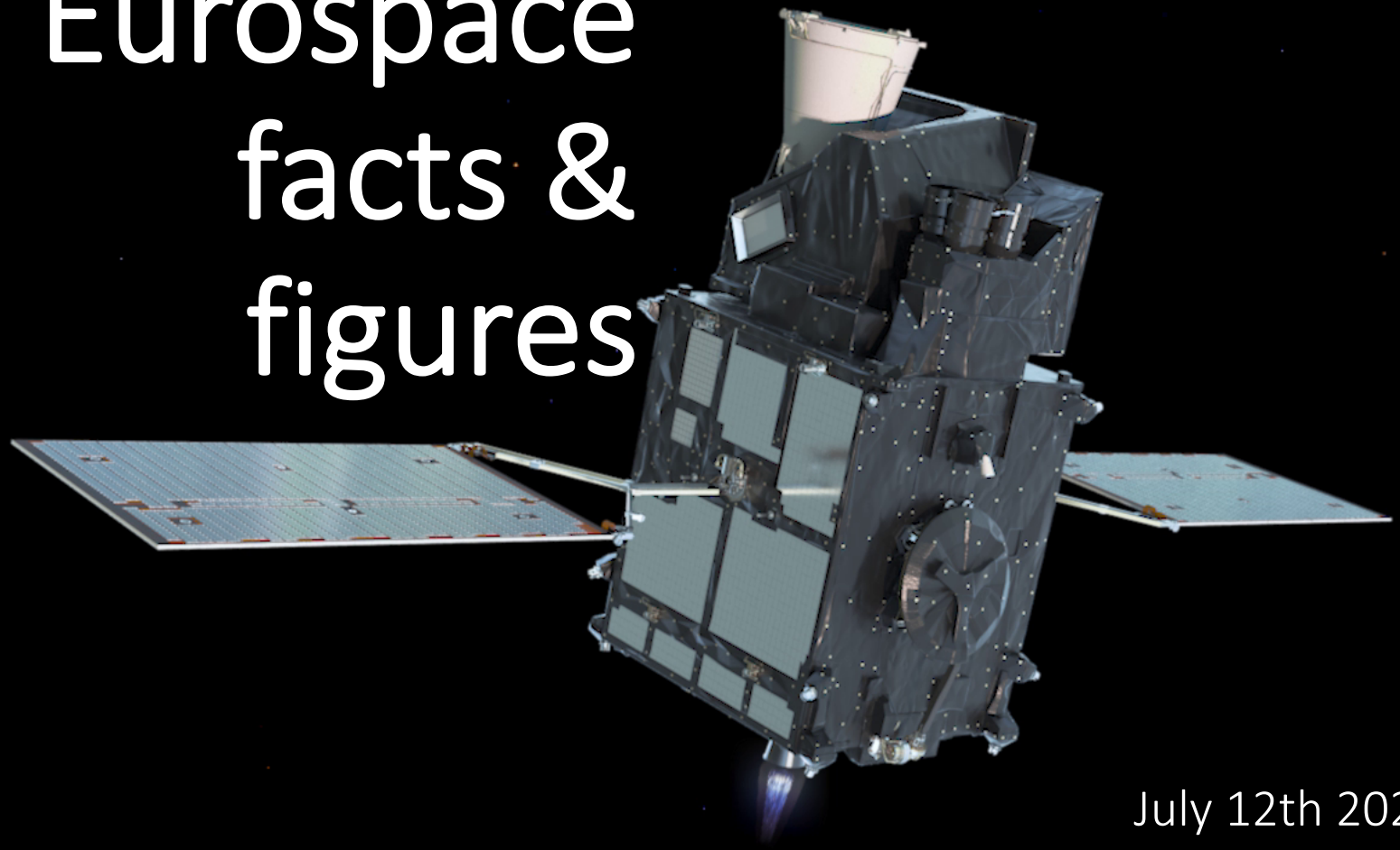
Eurospace facts & figures



July 12th 2023

Press Release

Foreword

Survey statistics	Nb of units	Final sales M€	Space empl.
All units in the model	478	8244	57462
Units updated	215	7029	41858
Proxies	263	1216	15603
Survey representativeness	**45%**	**85%**	**73%**

- The 27th edition (release 2023) of the annual facts and figures report will be available in July 2023.
  - The latest full report (2023 edition) is available to selected institutional contacts, to Eurospace members and to all the companies that have supported the survey.
    - All others will find on www.eurospace.org the 2022 edition for free download.
- The European space industry has registered a drop of sales worth 400M€ in 2022 down to 8,25B€
  - The European space manufacturing sector has recovered partly from the Covid-19 sales drop, but some market segments are still affected by structural slowdown (commercial satellite and launcher segments)
- Employment figures, in contrast, are still in growth now topping at >57000 FTE in 2022.
  - This is a subject of slight concern, considering that most of the growth is fuelled by the major hiring spree of newcomers in the sector (the newspace)
  - Due to low/no revenues of most newcomers, the workforce productivity of the sector is dropping.
    - **138k€/worker in 2023, vs >170k€/worker in the period 2010-2019.**

Data sources copyright and methodology

- Data sources
  - Eurospace facts & figures annual survey
  - Eurospace LEAT database
  - Eurospace 'new space' observatory
- **All our data and charts are prorietary**
  - Please read our copyright notice, **our charts, and our data are copyright protected.**
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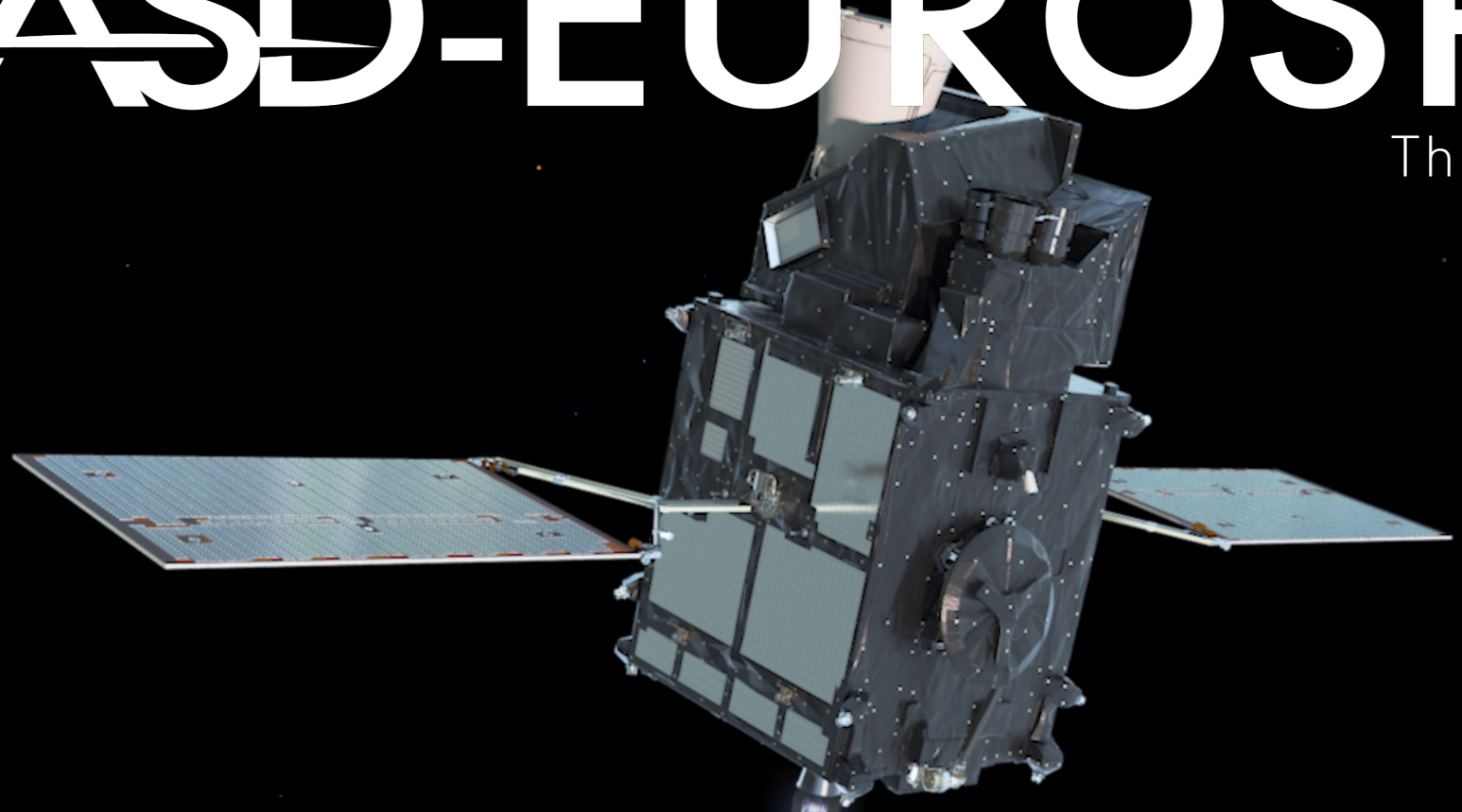
  - Contact Pierre Lionnet (pierre.lionnet@eurospace.org) for more information

- Key methodological points
  - Launched mass in tons is established from public sources
  - Market values estimates in $ are produced using a proprietary parametric price model. The model produces the full value of the spacecraft, and of its launch service, at the date of launch
  - European industry sales and employment are measured by survey
    - Sales are consolidated/final sales
    - Employment are full time equivalent
    - The perimter is strictly space systems (i.e. launchers, spacecraft, professional ground segments, engineering, test, and integratio/test support activties & equipment

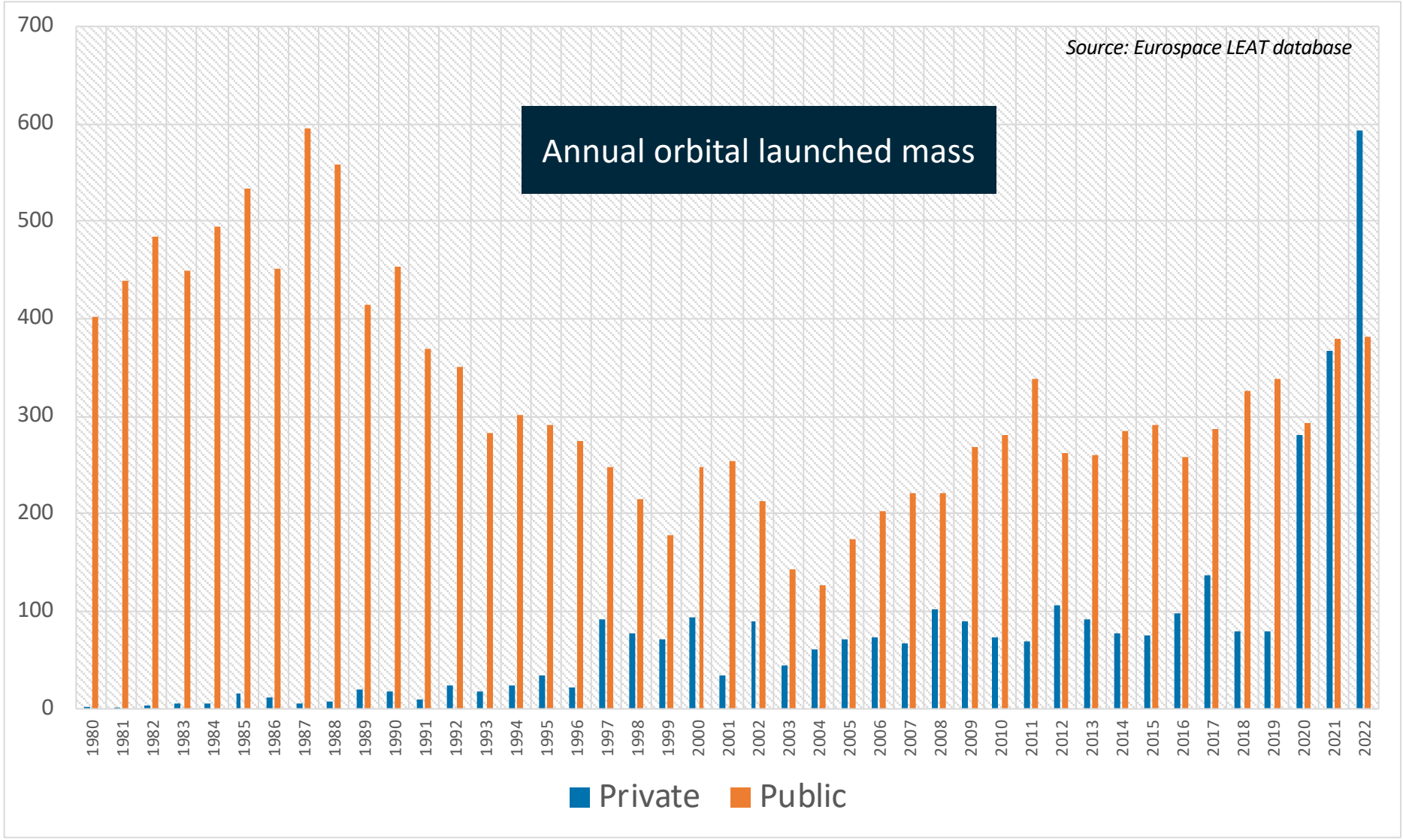
ASD-EUROSPACE

The Space group in ASD



The global context

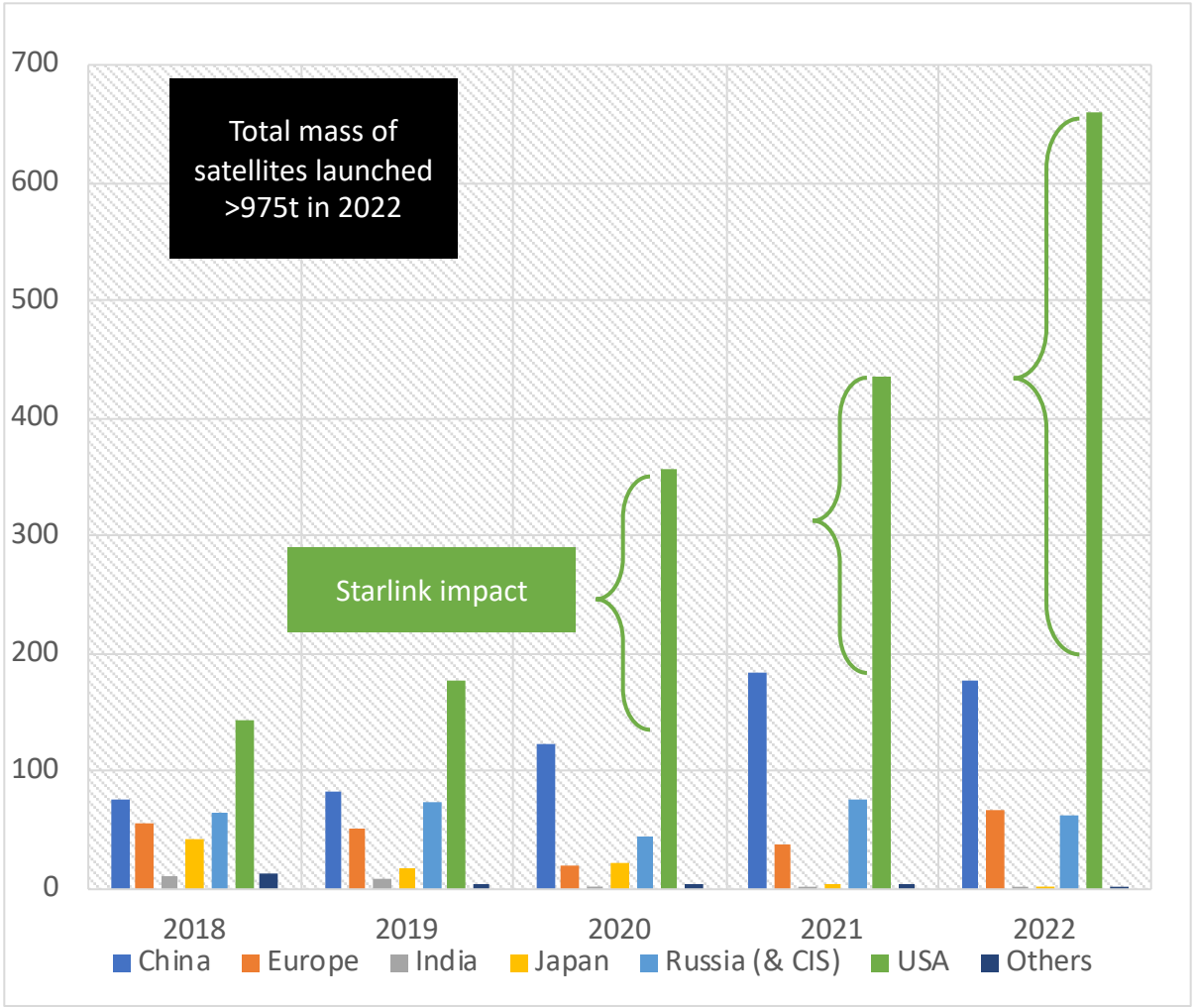
Global space activity since 1980 by customer type (tons/year)



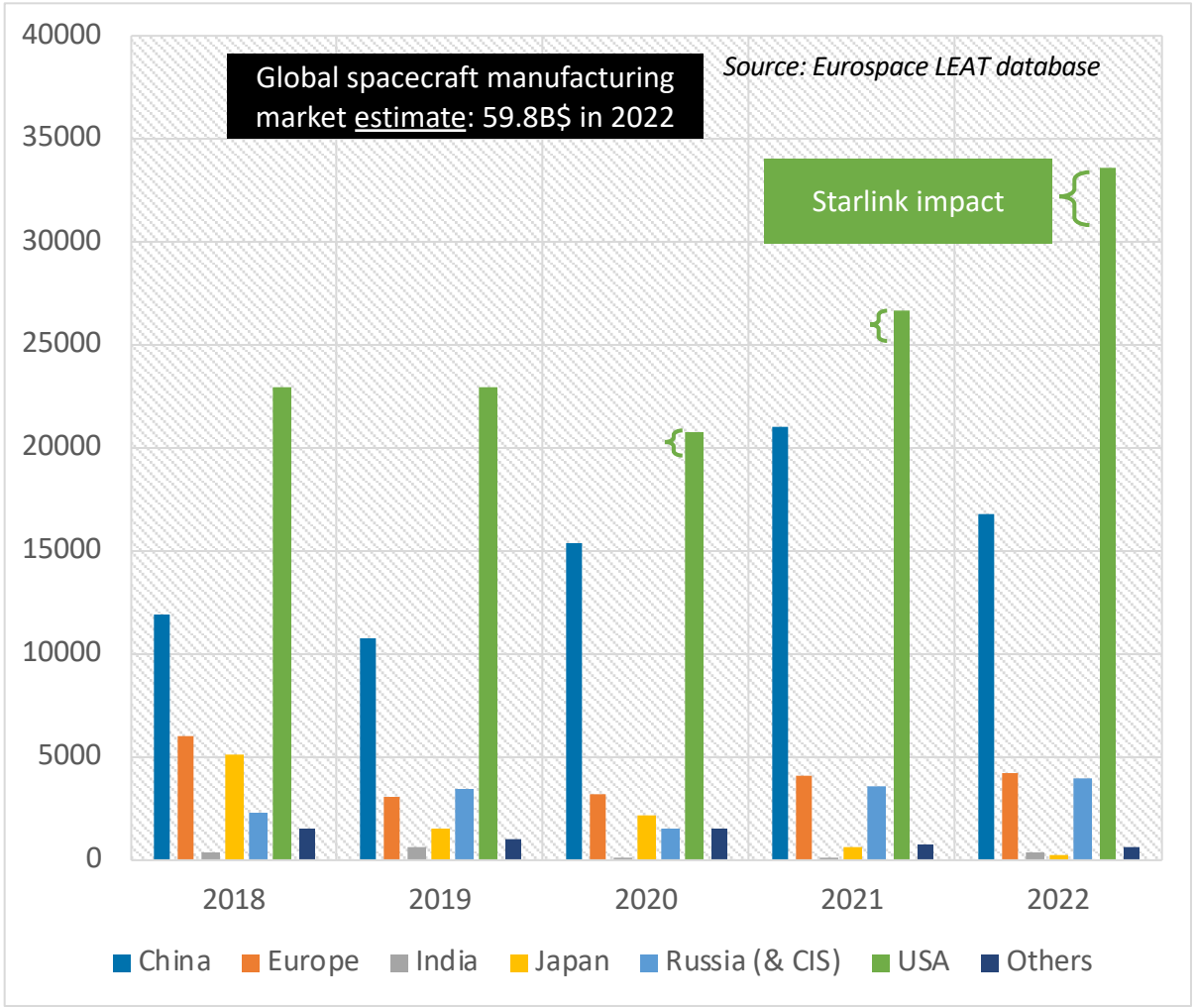
- In the past decade an average 498 tons of spacecraft are launched in space every year. The average launched mass has been extremely stable since the mid nineties with a few cyclical/erratic variations. There has been no recent 'boom' nor a major 'crisis' in global space activity **until the initial rollout of the Starlink constellation in 2020**: this deployment alone represented an average 250-300 tons more than the usual launch activity, and it is disrupting annual launch statistics.
- Starlink excluded, the spacecraft procured by commercial operators (i.e. not procured by institutions or government-owned entities) represent in average 20% of the annual launched mass. Privately-driven activity exhibits a slightly cyclical trend which has entered a receding phase since 2017.
- Spacecraft procured in the context government programmes historically represent 80% of global space activity. They have been in slight growth since 2016. *Source: Eurospace LEAT database*

Global Space industry output in 2018-2022

Global Spacecraft Production by region (tons)



Global Spacecraft Production by region (M$)



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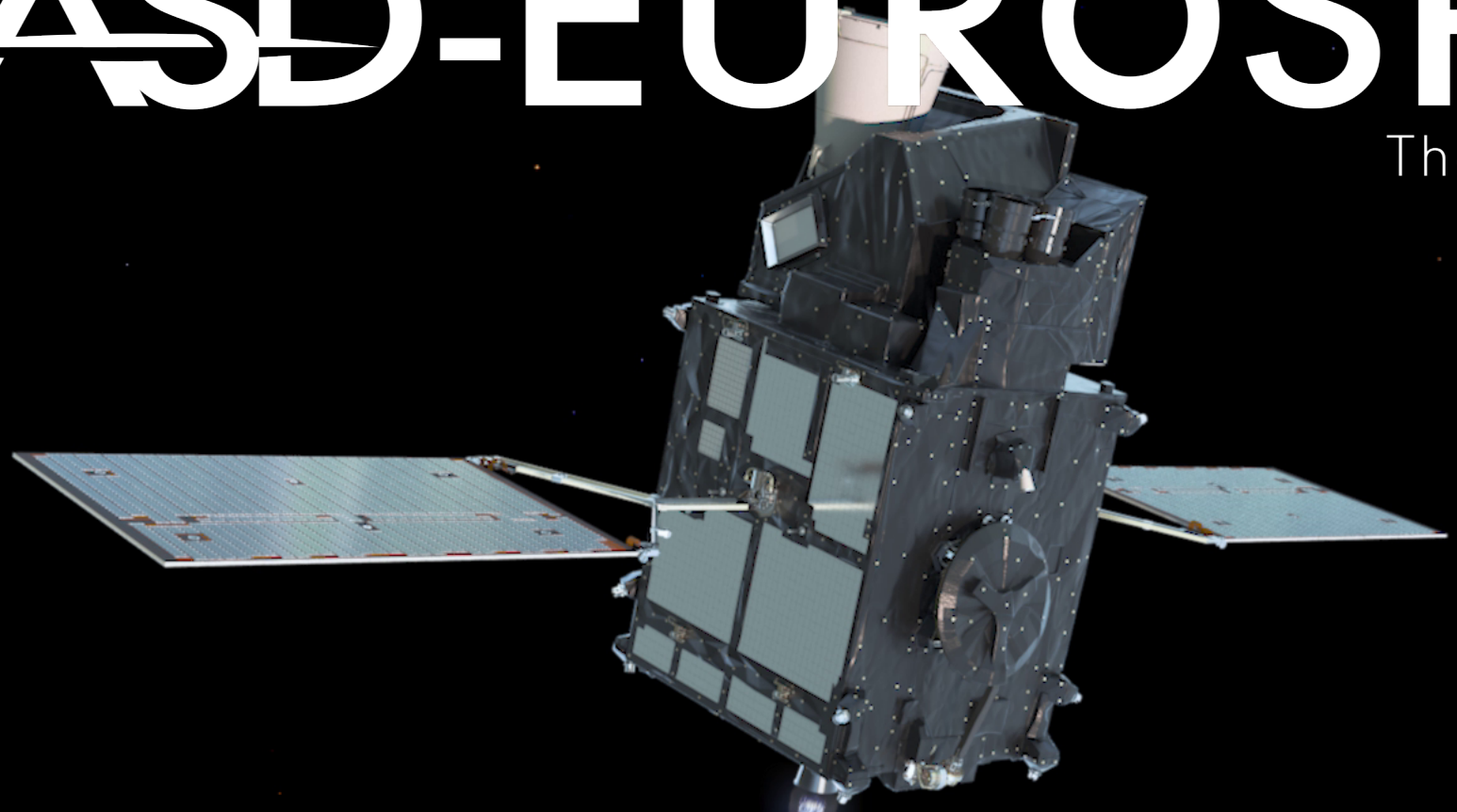
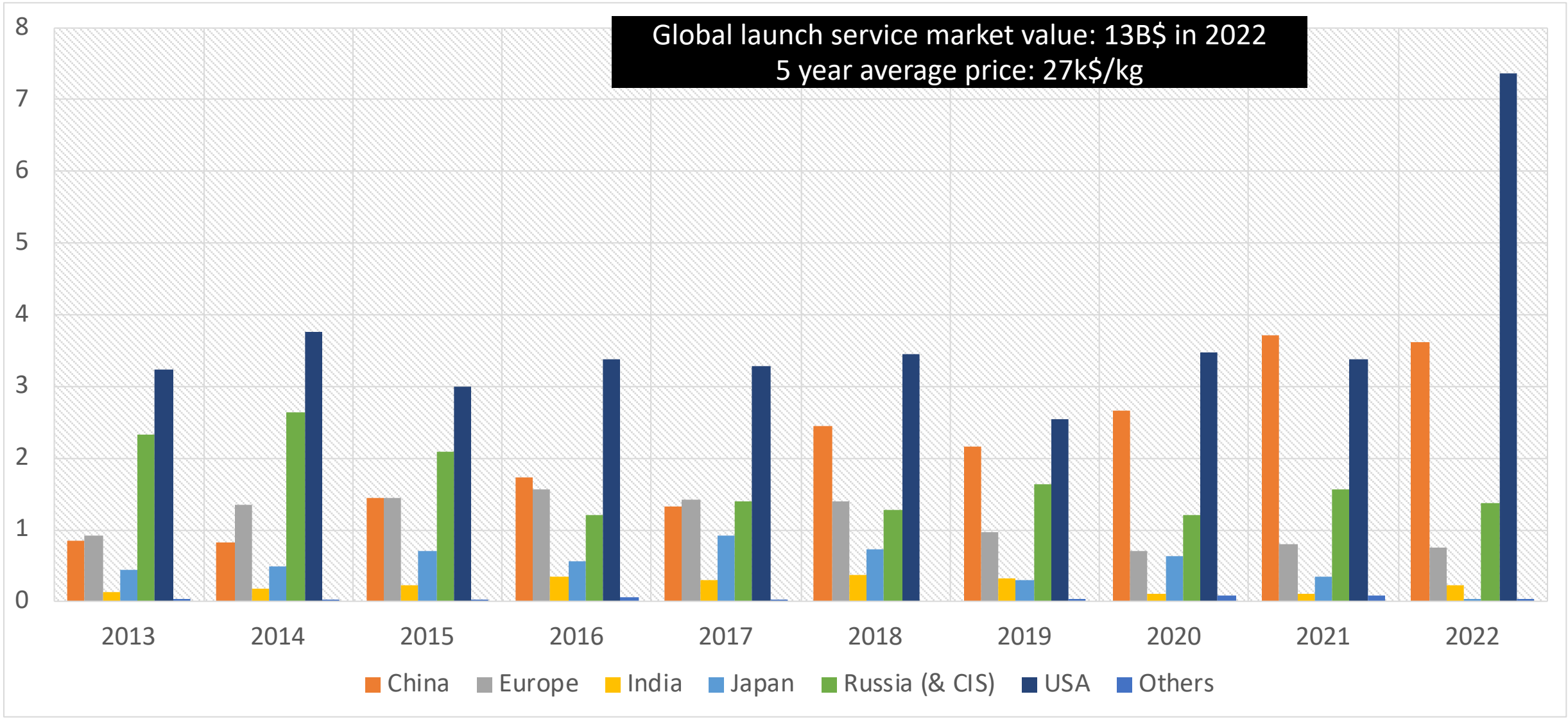
The Space group in ASD

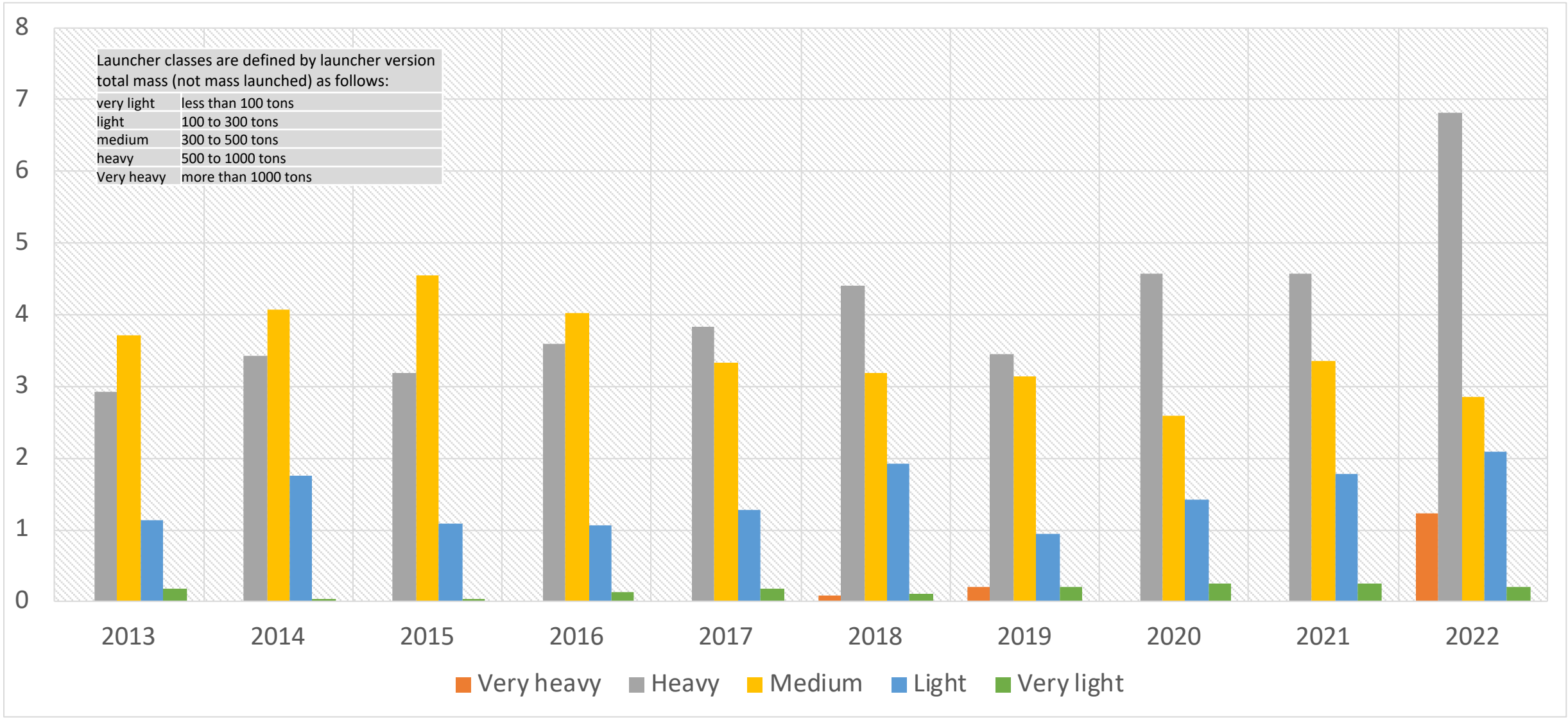


The launch service markets

Launch service market estimate by Launcher manufacturing region – constant B$ at PPP

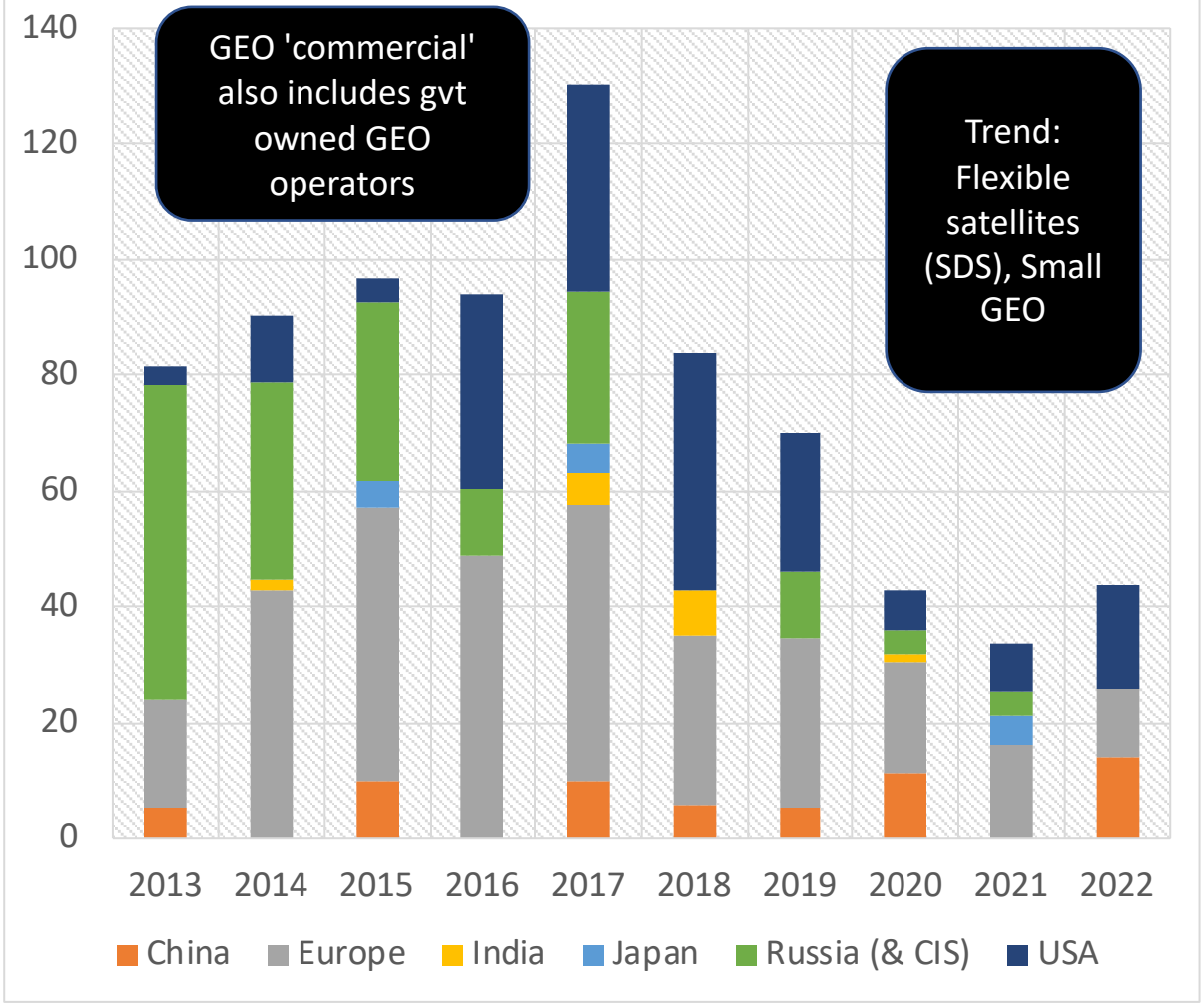


Launch service market estimate by Launcher class – constant B$ at PPP

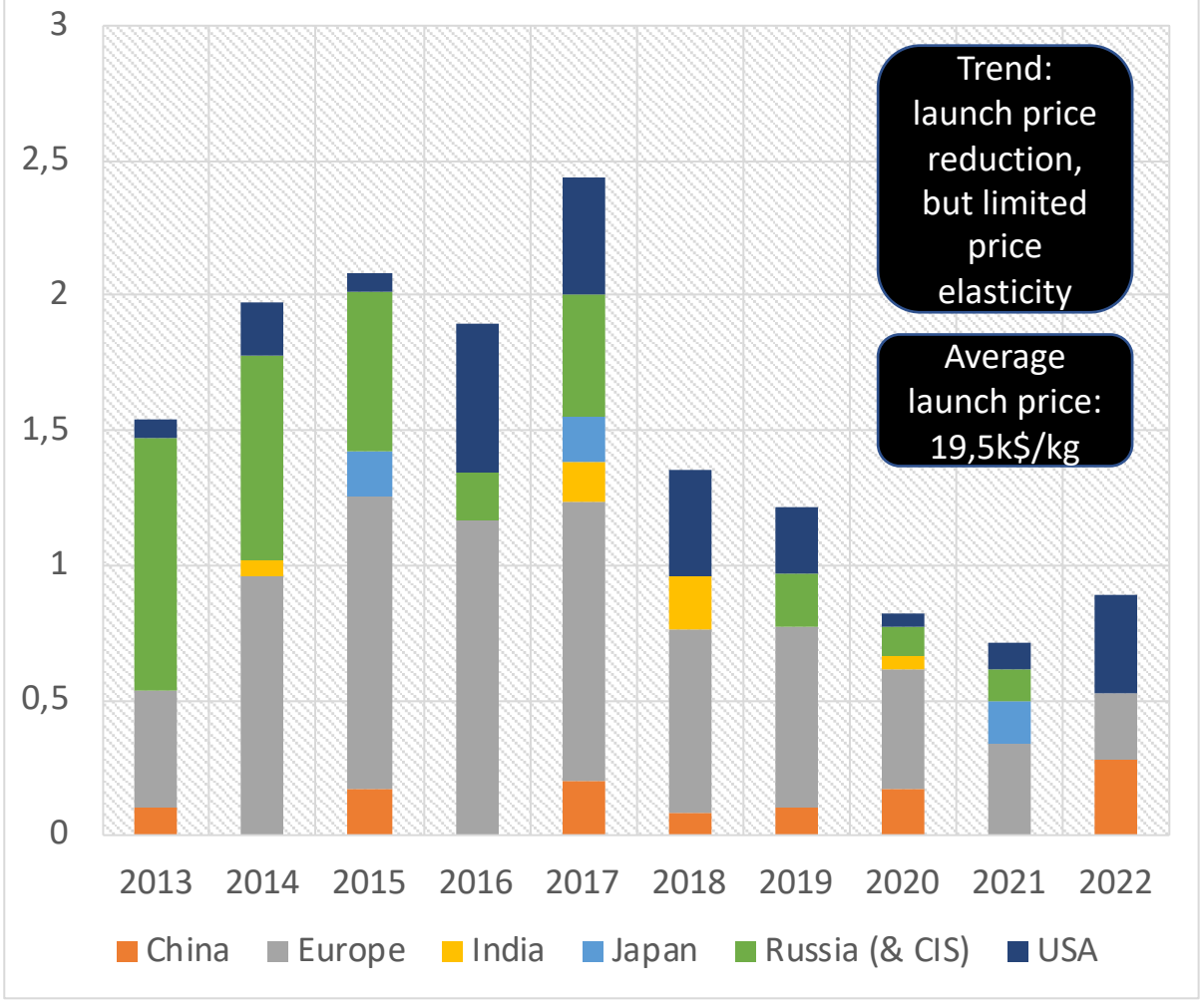


GEO 'Commercial' Launch Market by Launcher region

In Mass (tons)



In $ Billion



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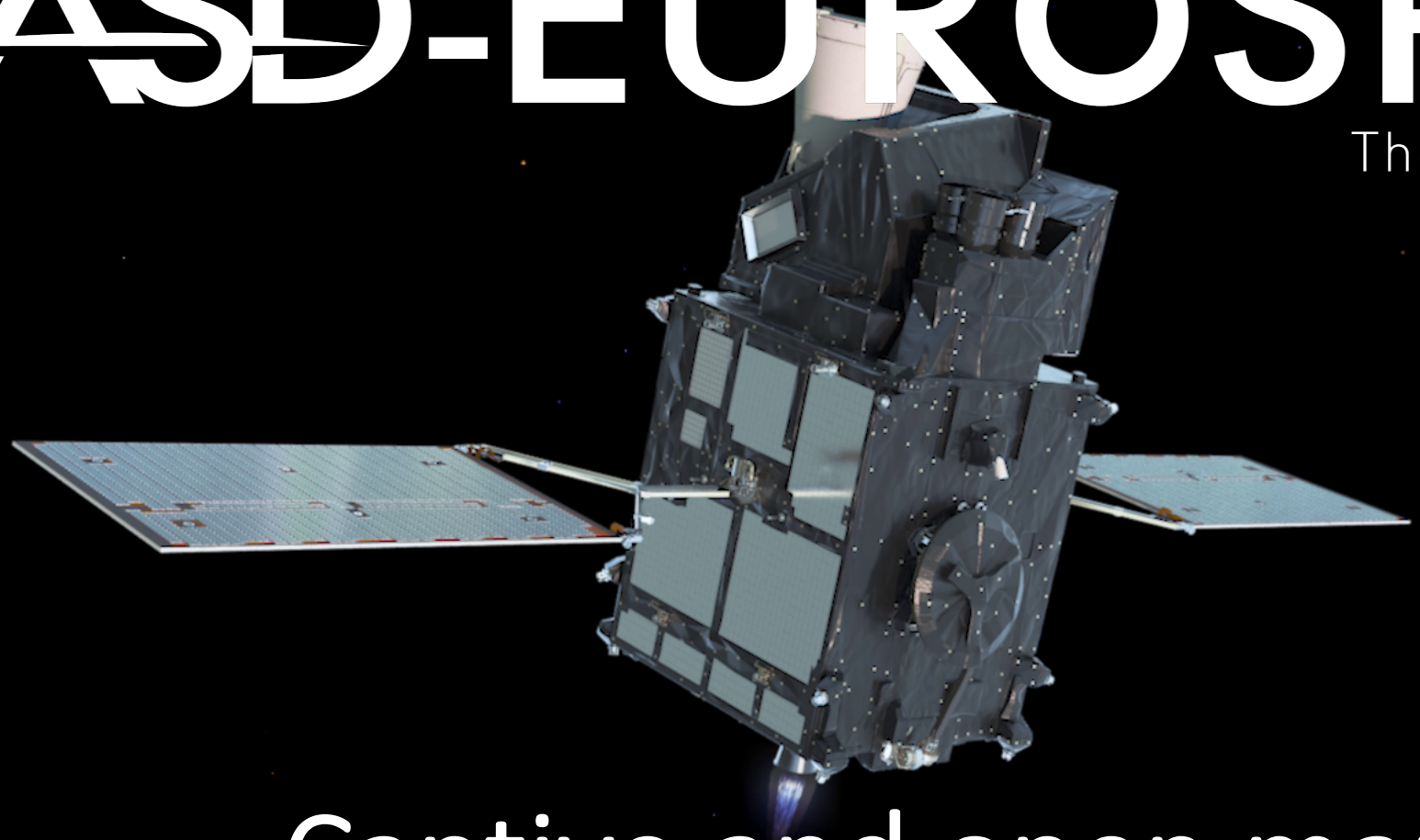
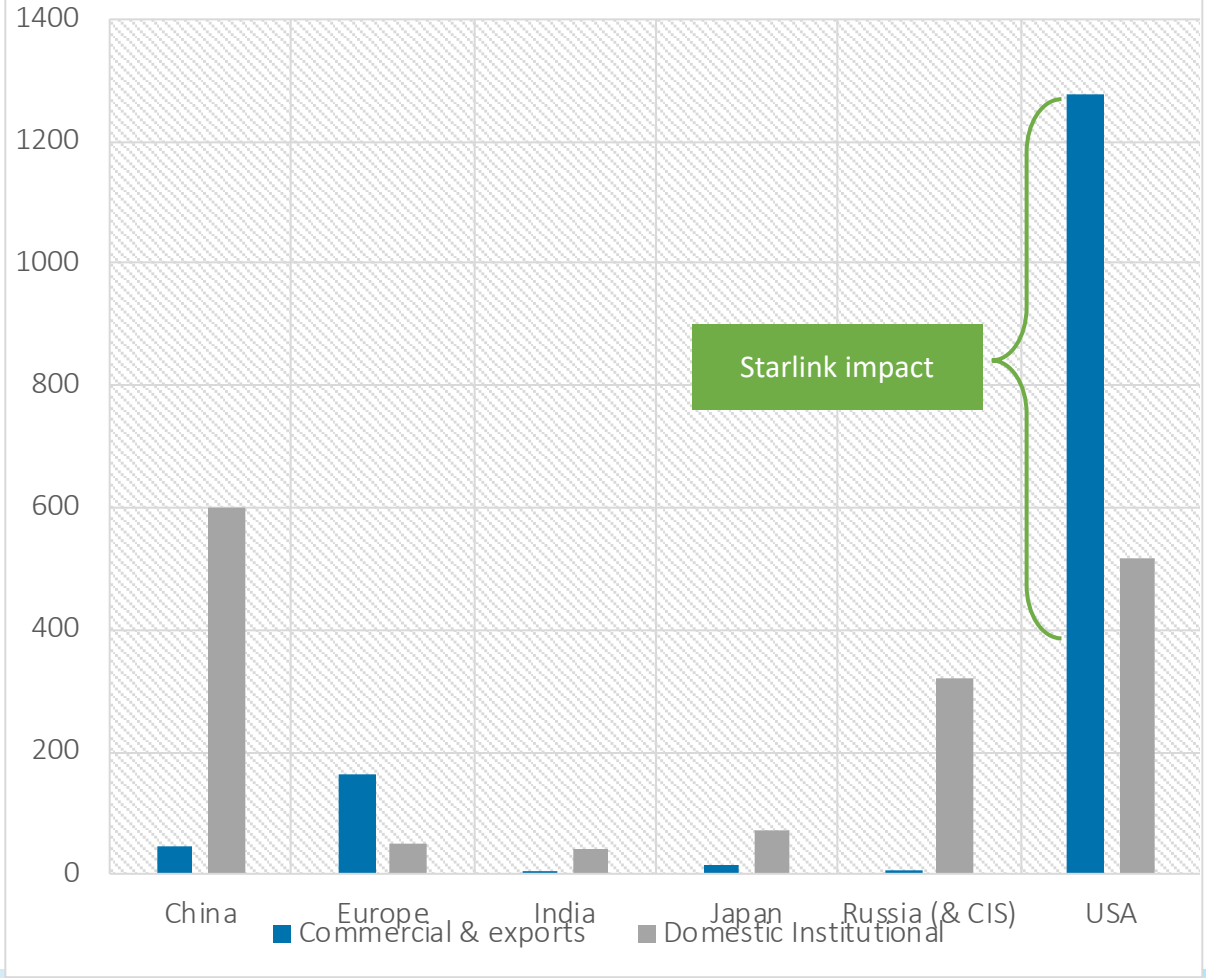
The Space group in ASD



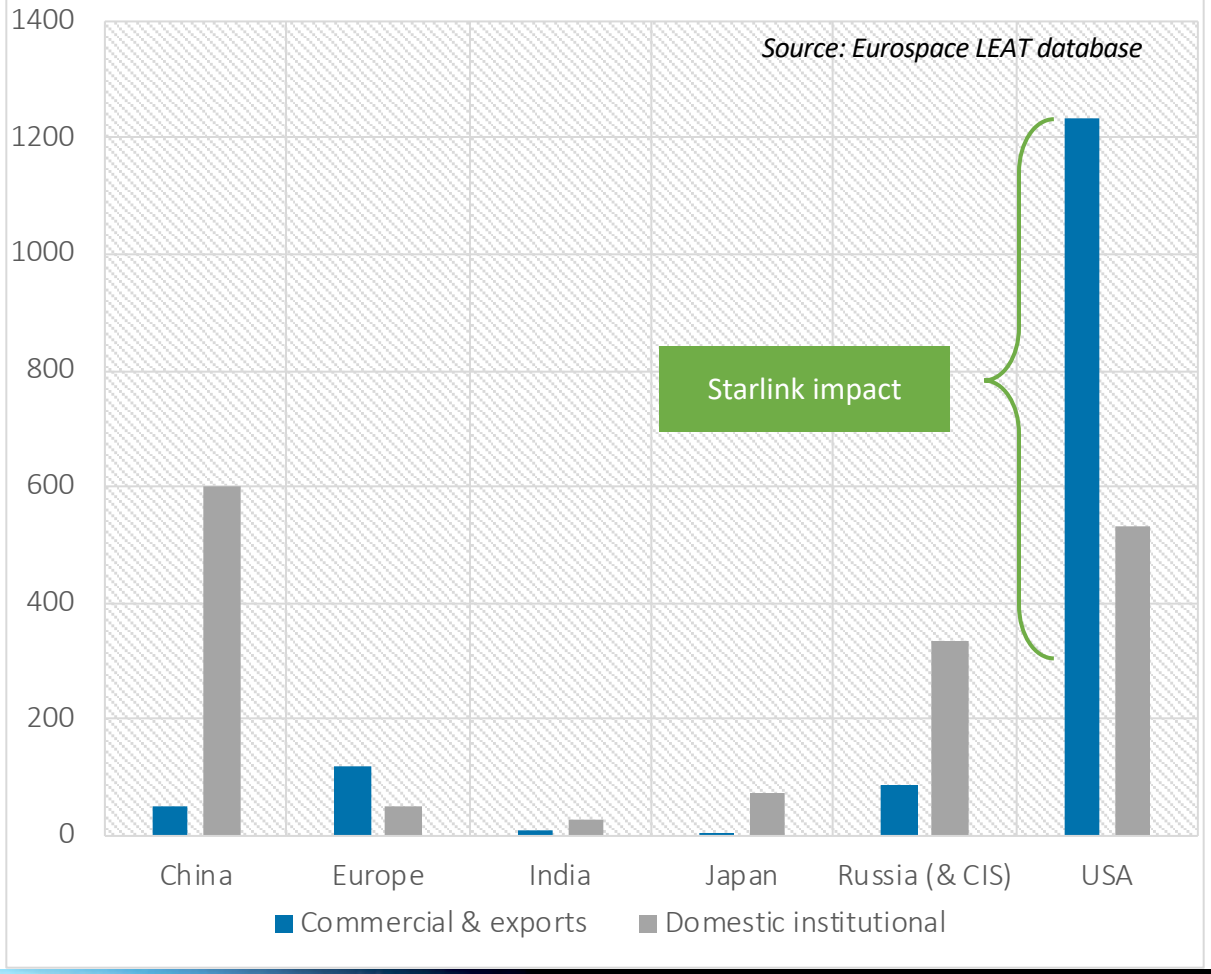
Captive and open markets

Space industry exposure to open & captive market segments in 2018-2022

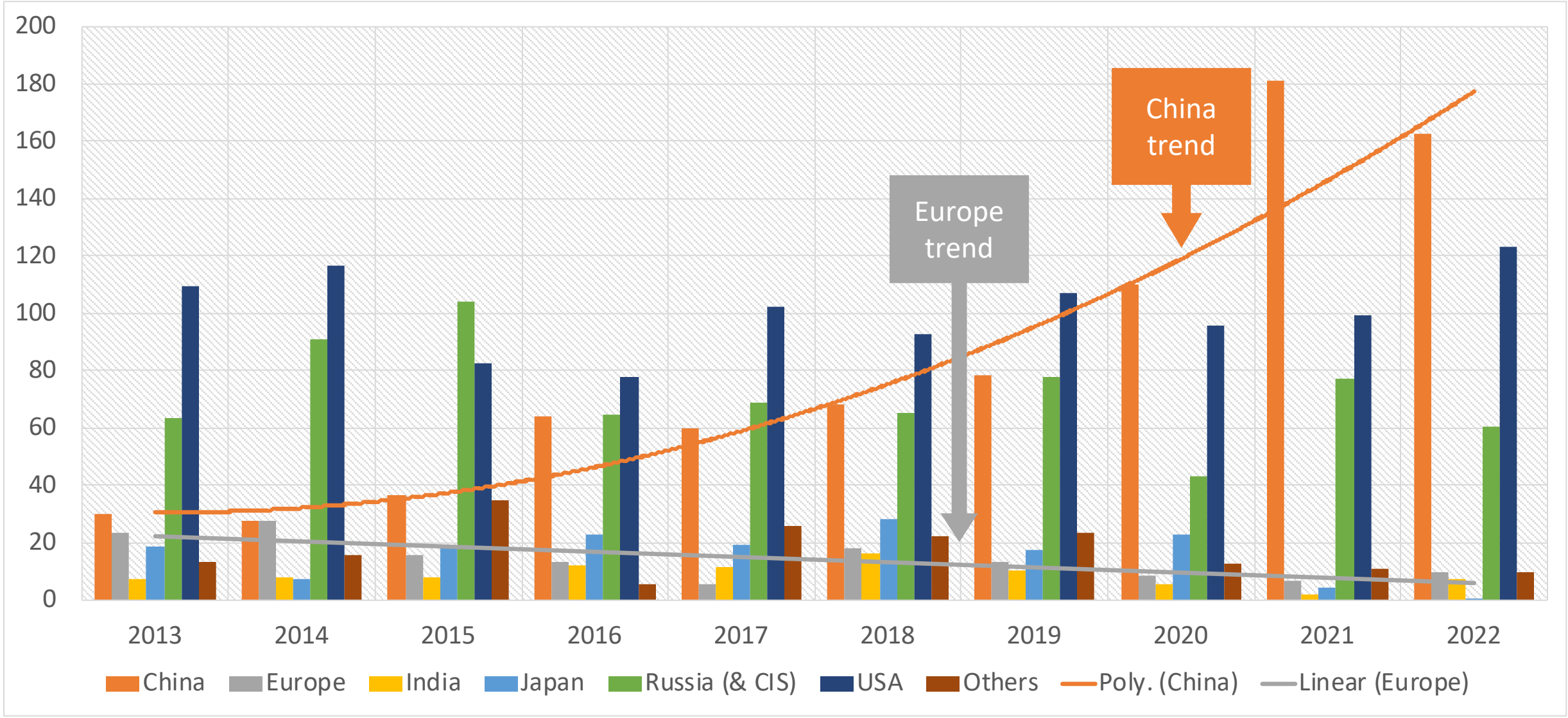
Global Spacecraft Production by region (tons)



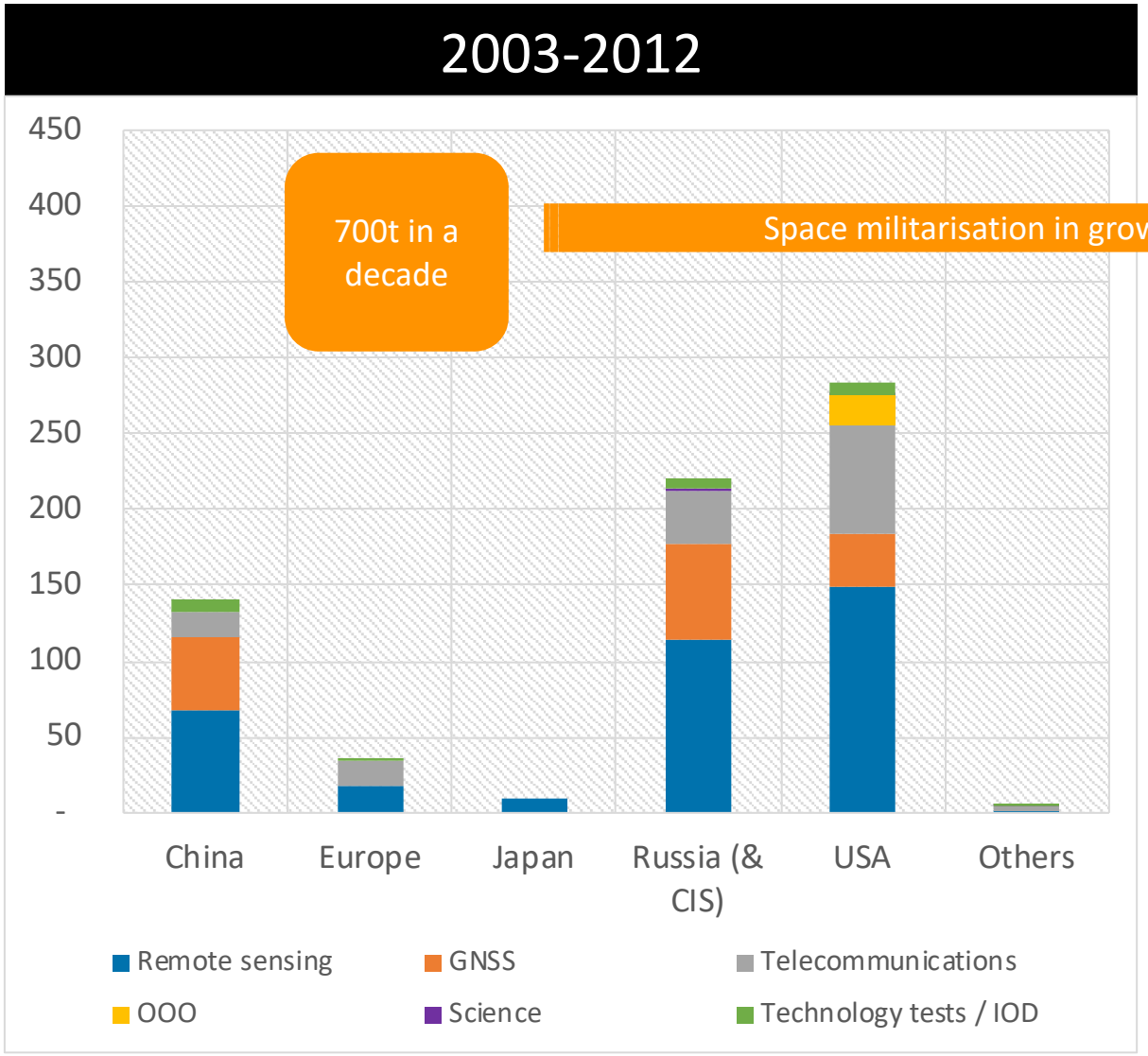
Global Launch Activity by Launcher Region (tons)



Institutional SC demand – all missions
total mass launched in 2012-2021 by customer region (tons) – public customers



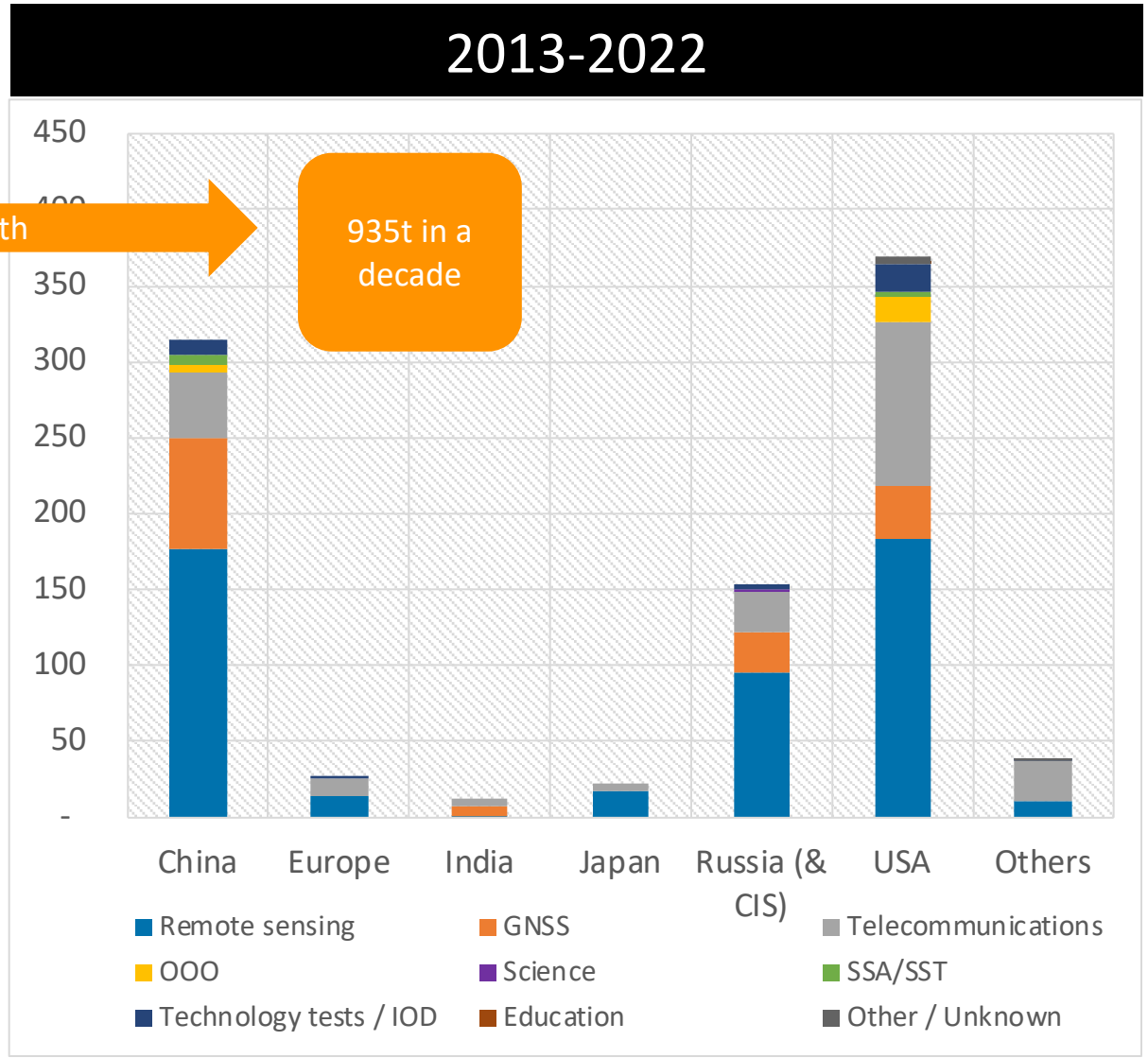
Military satellites launched by Customer region (mass/t)



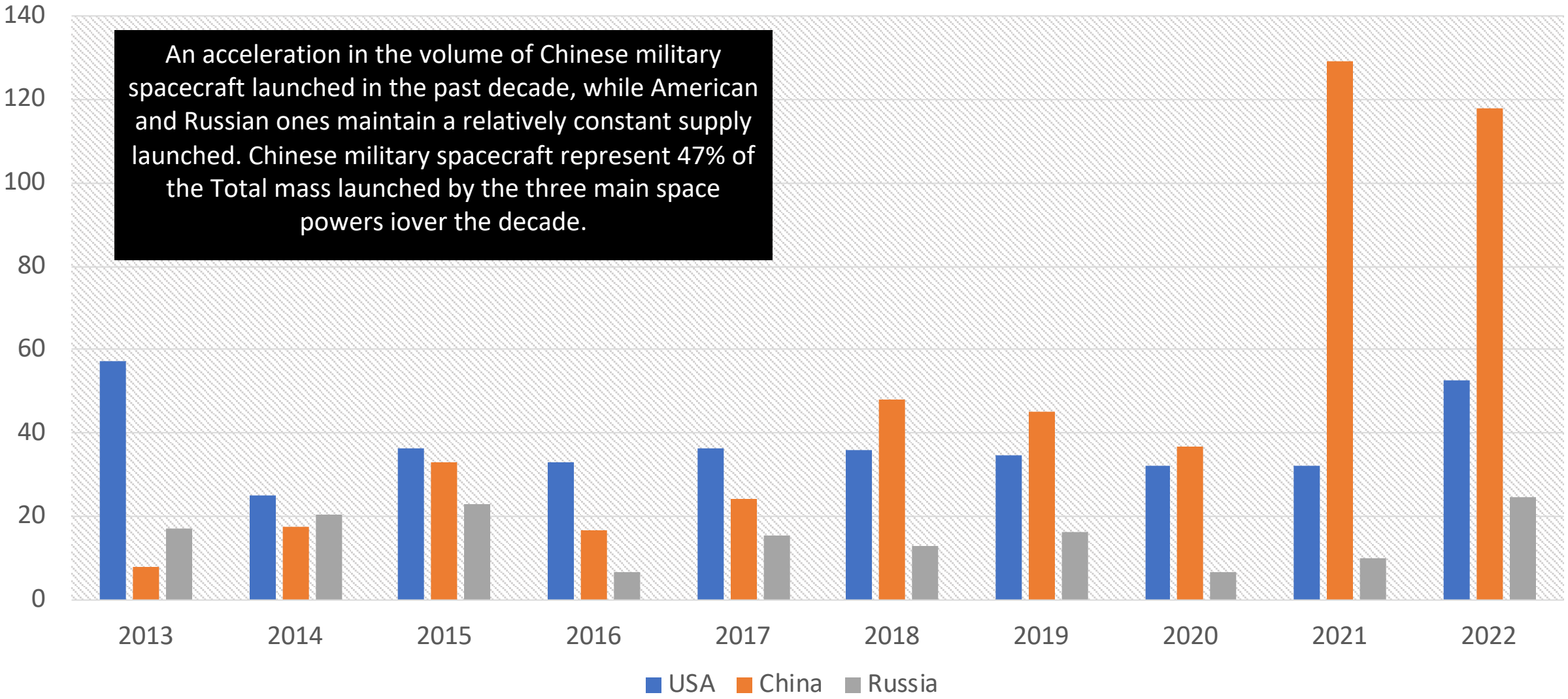
700t in a decade

Space militarisation in growth

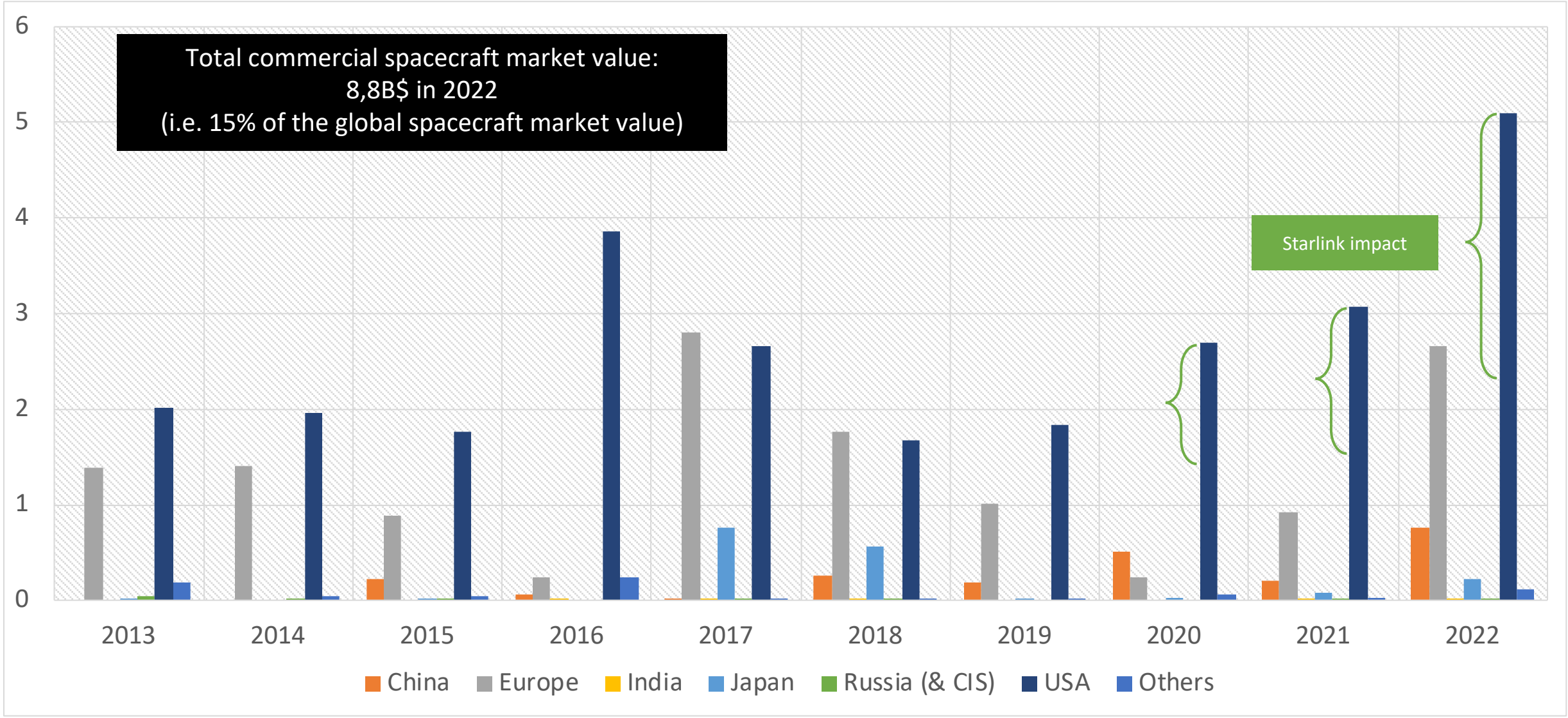
935t in a decade



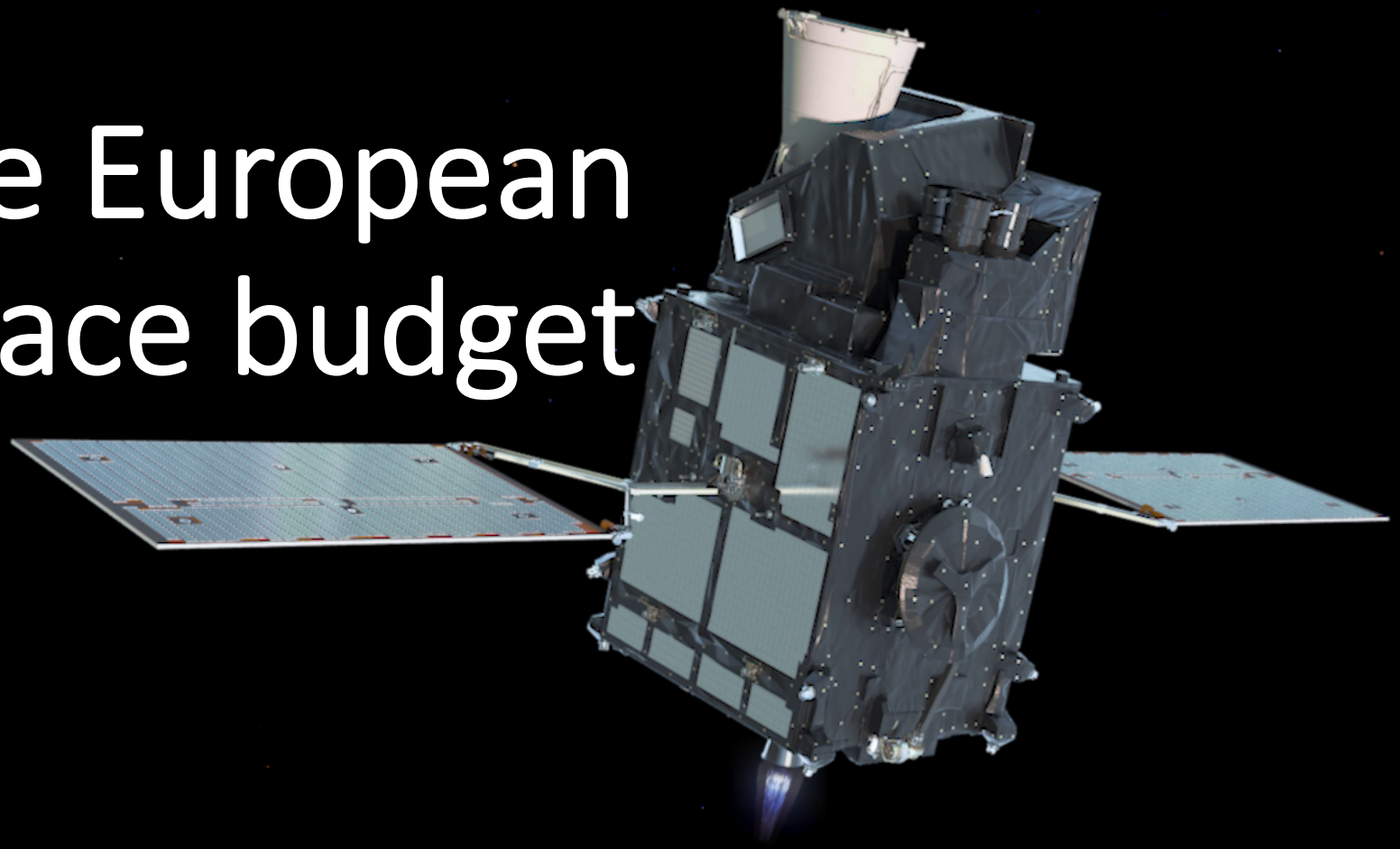
Evolution of military spacecraft launches by the three main space powers – by mass in tons



Commercial satellite market estimate by satellite manufacturing region – constant B$ at PPP (human missions excl.) – private customers only



The European space budget



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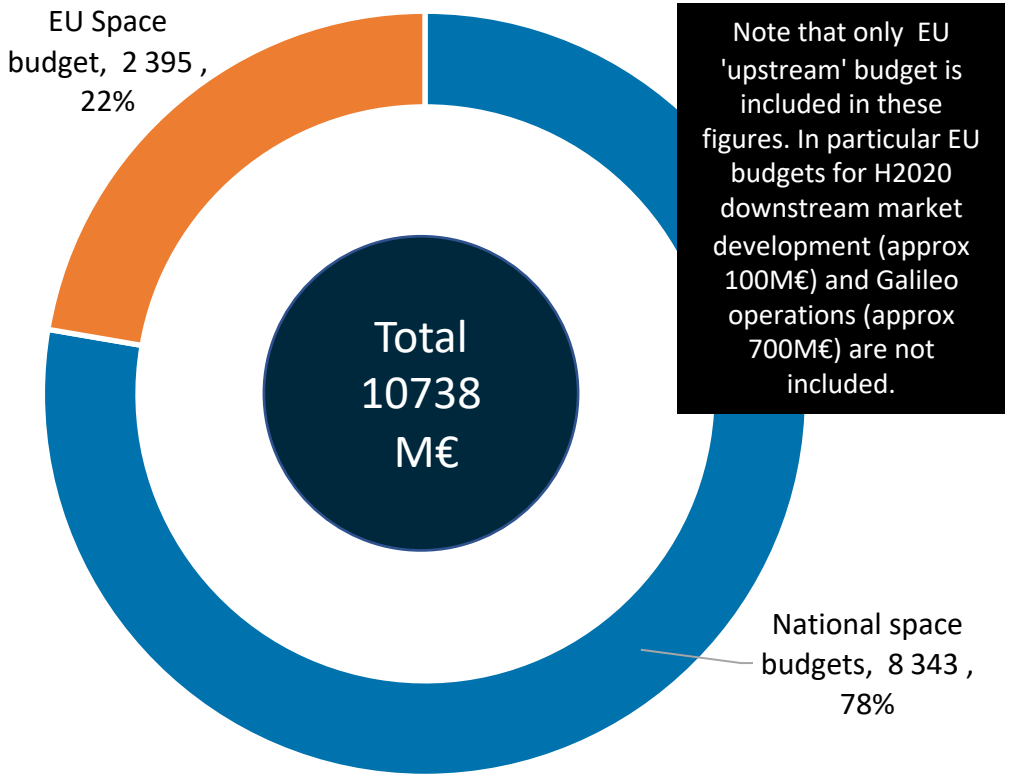
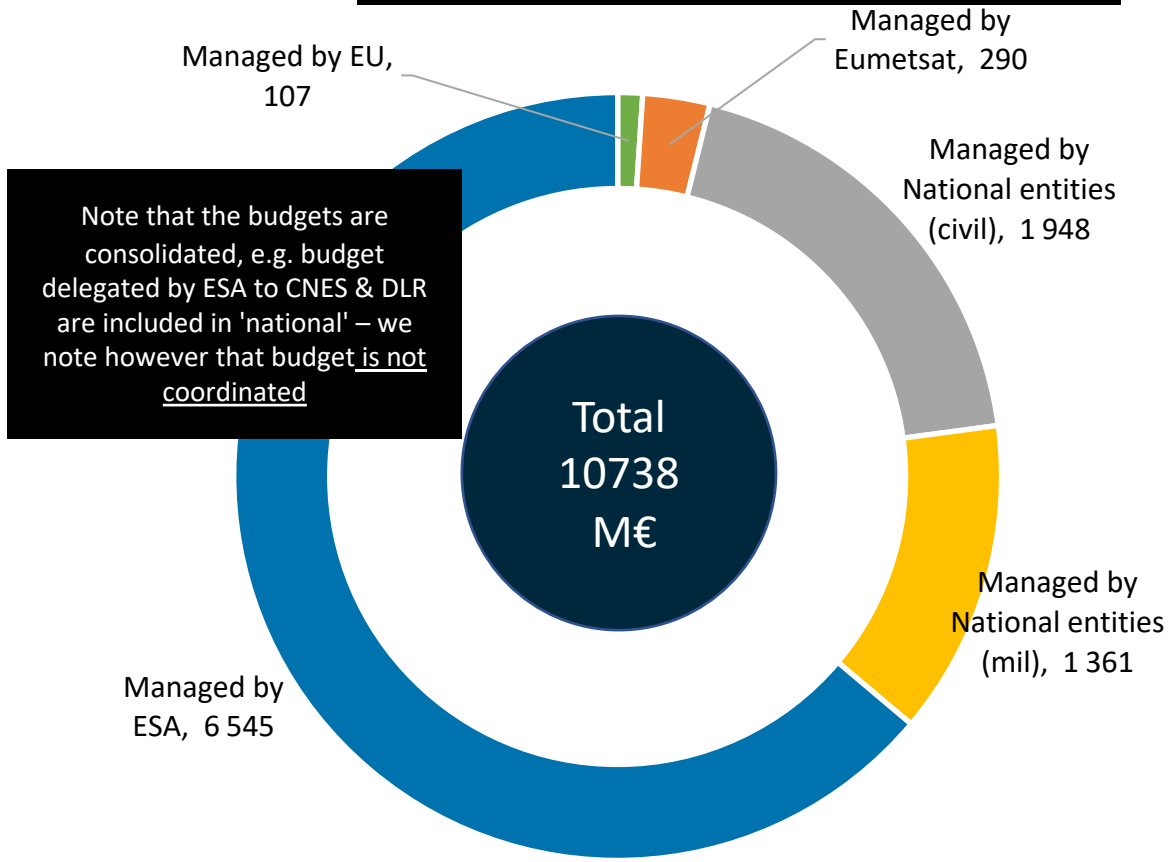
European Consolidated Space (upstream) Budget 2021

By source M€



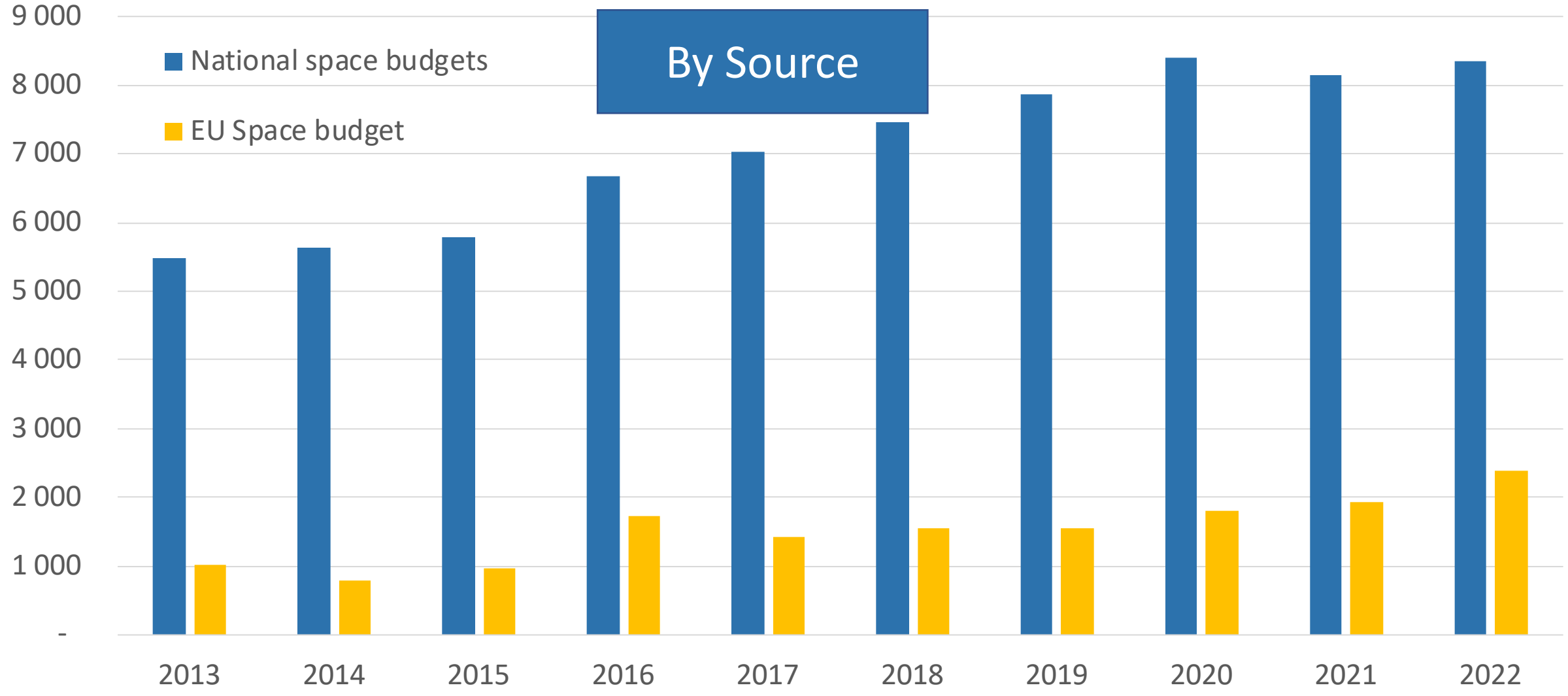
Note that only EU 'upstream' budget is included in these figures. In particular EU budgets for H2020 downstream market development (approx 100M€) and Galileo operations (approx 700M€) are not included.

By implementing entity M€

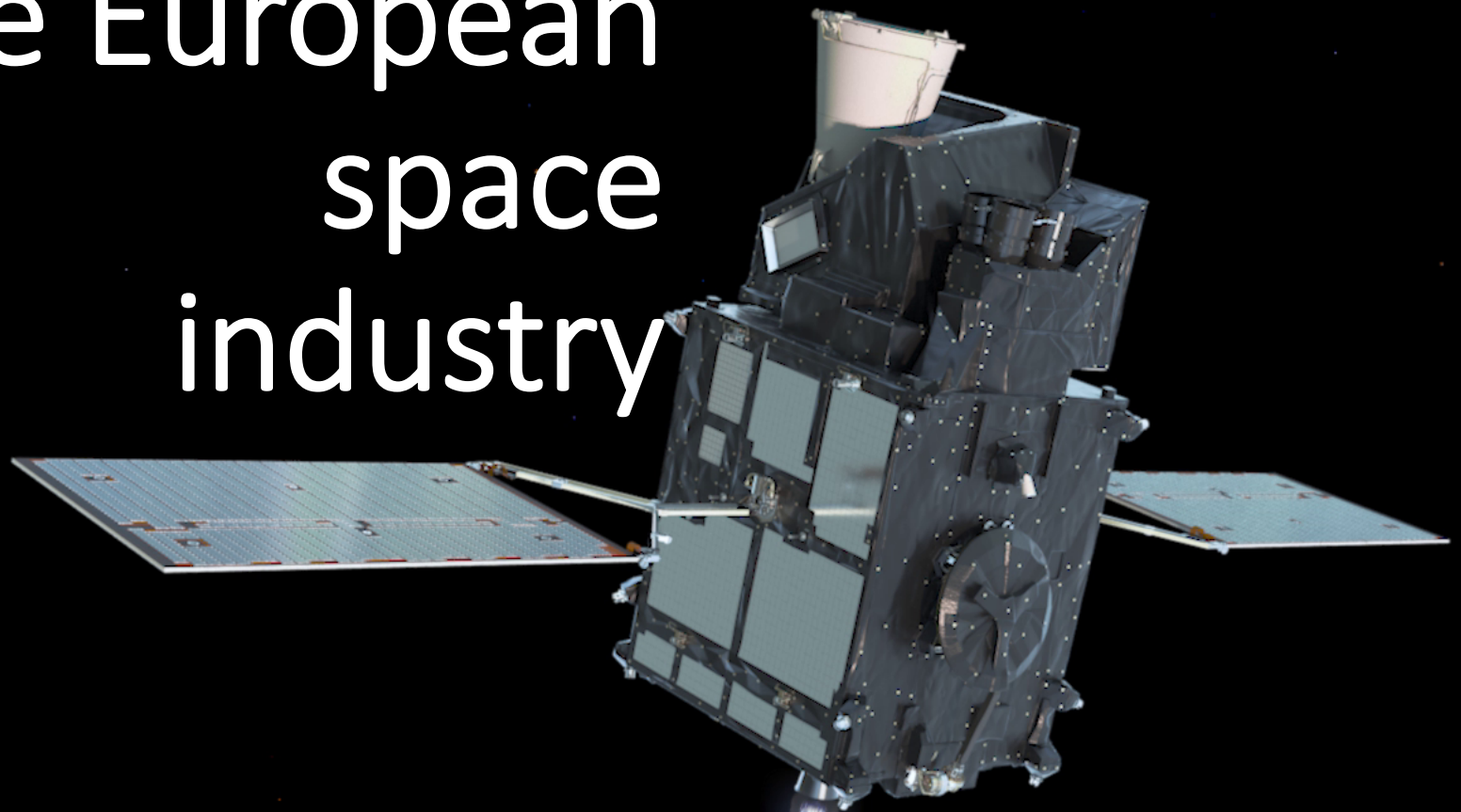


Note that the budgets are consolidated, e.g. budget delegated by ESA to CNES & DLR are included in 'national' – we note however that budget is not coordinated

European Consolidated Space Budget 2013-2021 M€



The European space industry

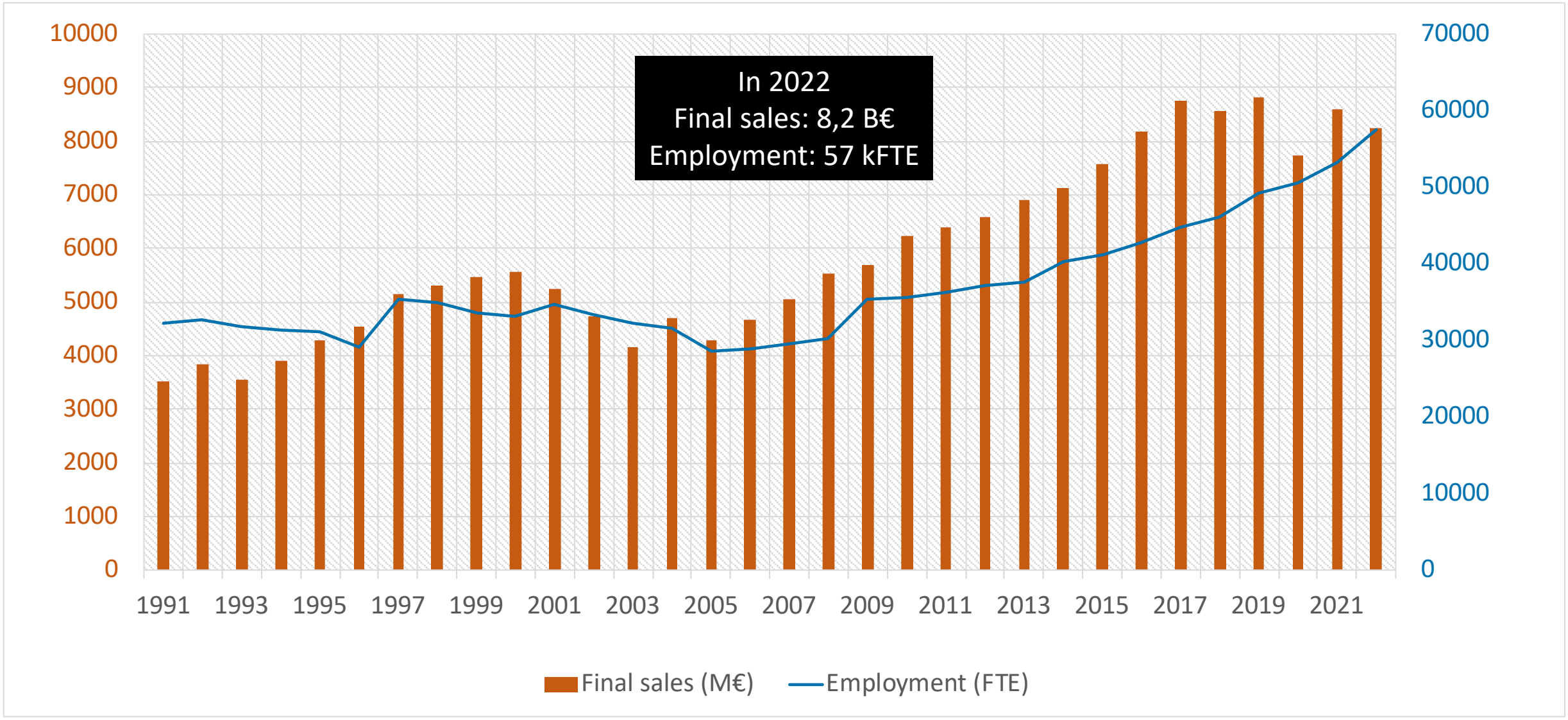


2023 Release of Eurospace facts & figures

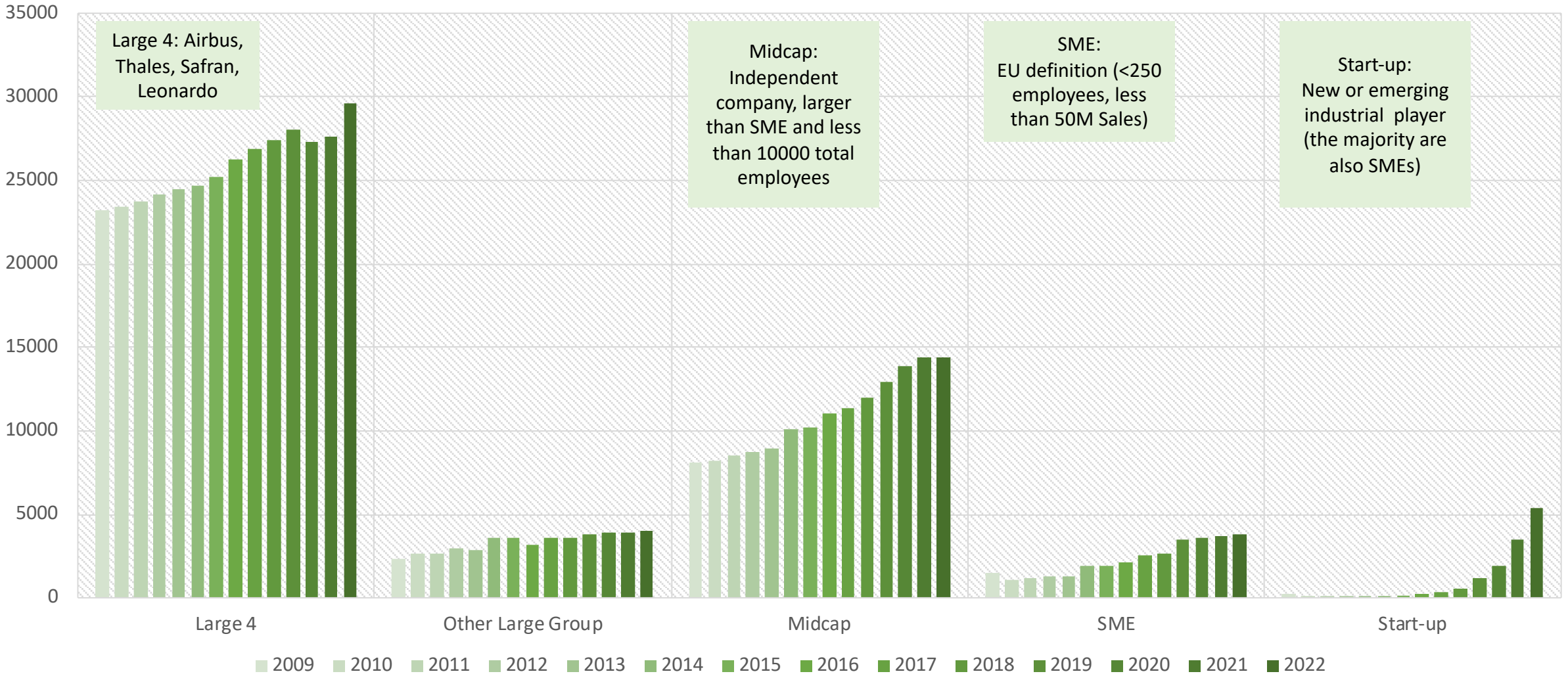
European space industry sales & employment

- **Industry posted final sales worth 8.2 B€ (-4%)**
  - In 2022 industry suffered from a significant activity slowdown (minus 400M€)
    - Business associated to the European institutional programmes has maintained its general level, but with different sub-segment trends
    - Commercial business still affected by a structurally declining market trend (constellation market not booming, GEO demand structurally low)
    - Launcher segment is the most affected by a durable business slowdown. Ariane5 phase out, technical issues on Euro launchers, and SpaceX aggressive pricing policy...)
- **Direct industry employment 57822 FTE (+8%)**.
  - Employment was in growth, supported by three different trends:
    - Employment increase in **larger players**
    - Stability to moderate growth of **midsize players**' employment
    - Significant employment growth in smaller players (and in particular the continued development of the new space start-ups) – this segment does not (yet?) contribute to sales in a significant way.

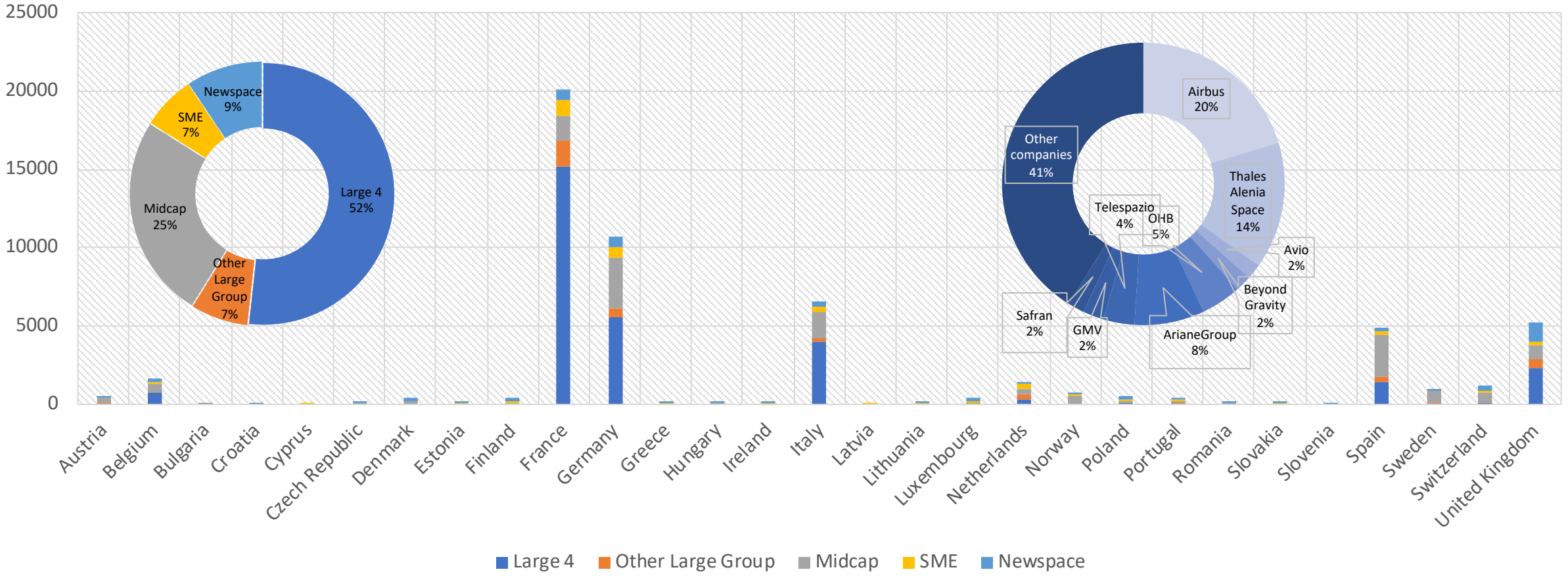
European space industry sales & employment



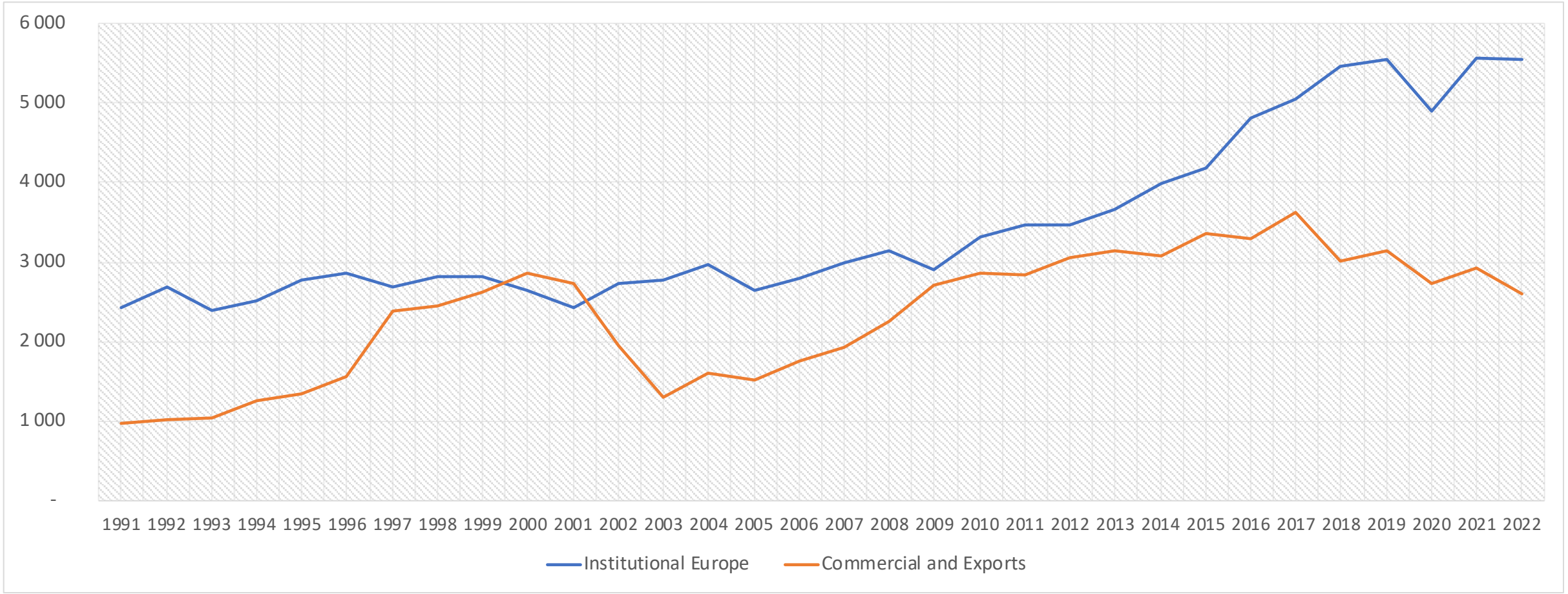
Employment trends by company type - FTE



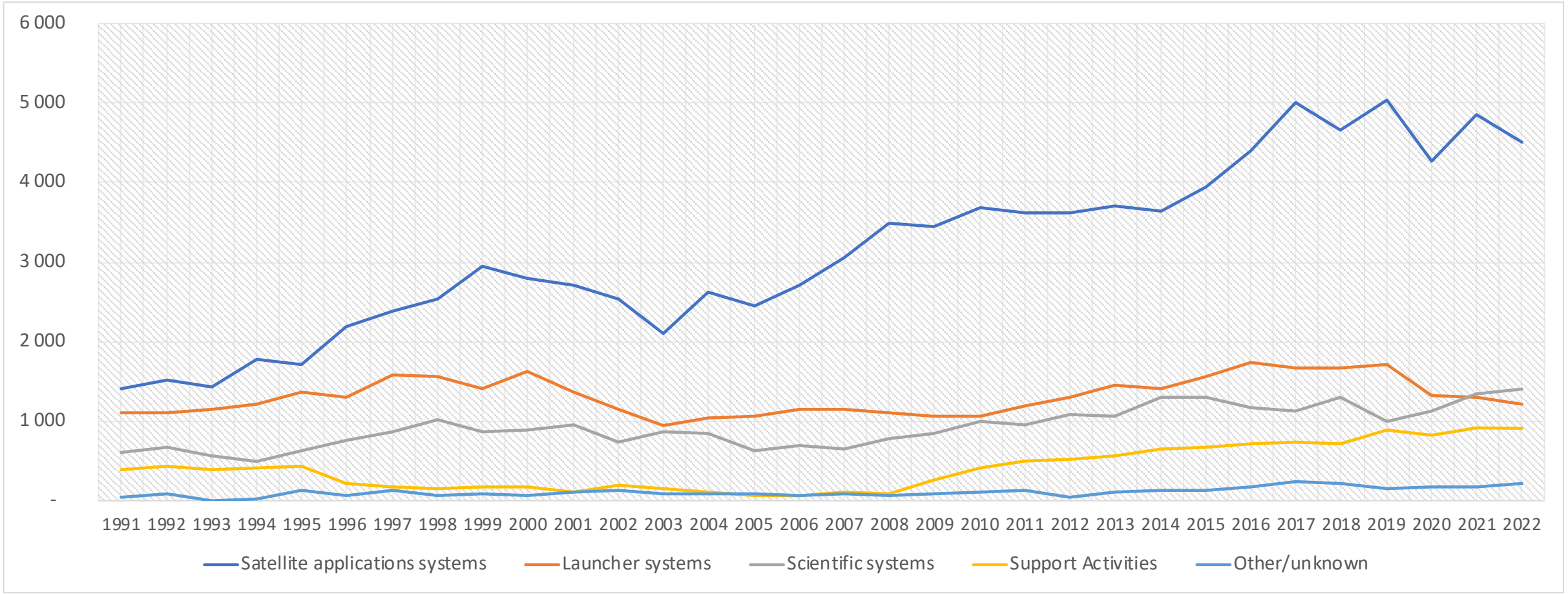
Employment distribution by country and company type and corporate entity - FTE



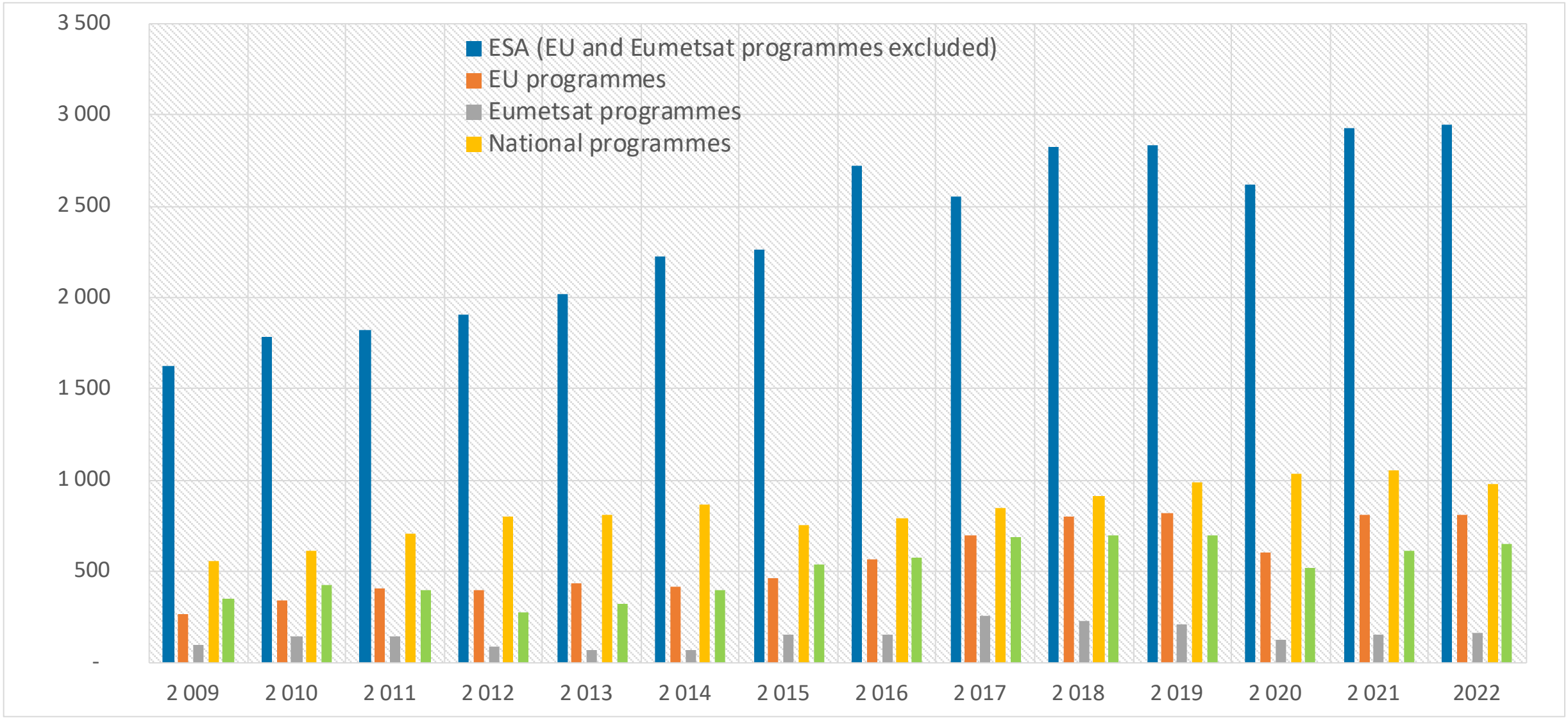
European space industry sales by main customer segment M€ current e.c.



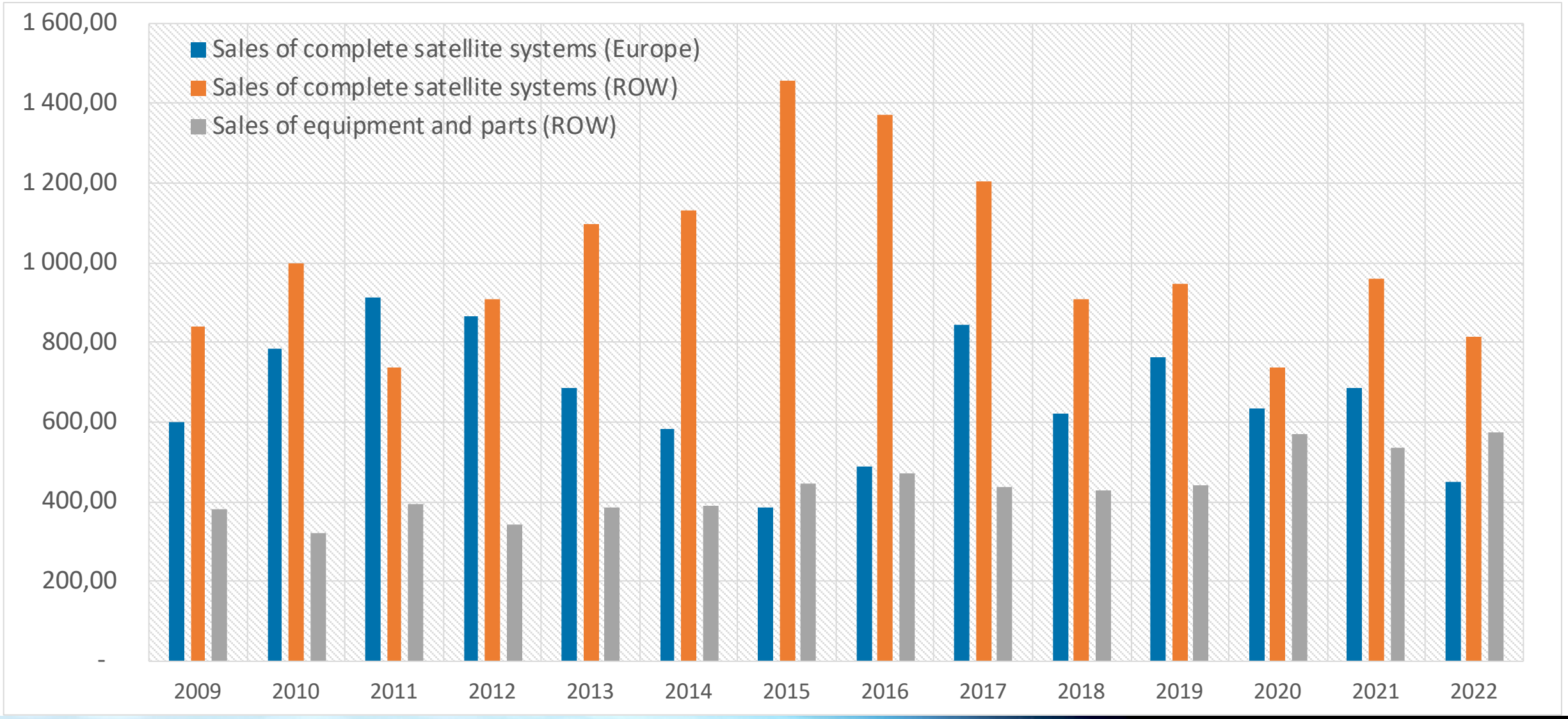
European space industry sales by main product segment
M€ current e.c.



European institutional markets and programmes M€

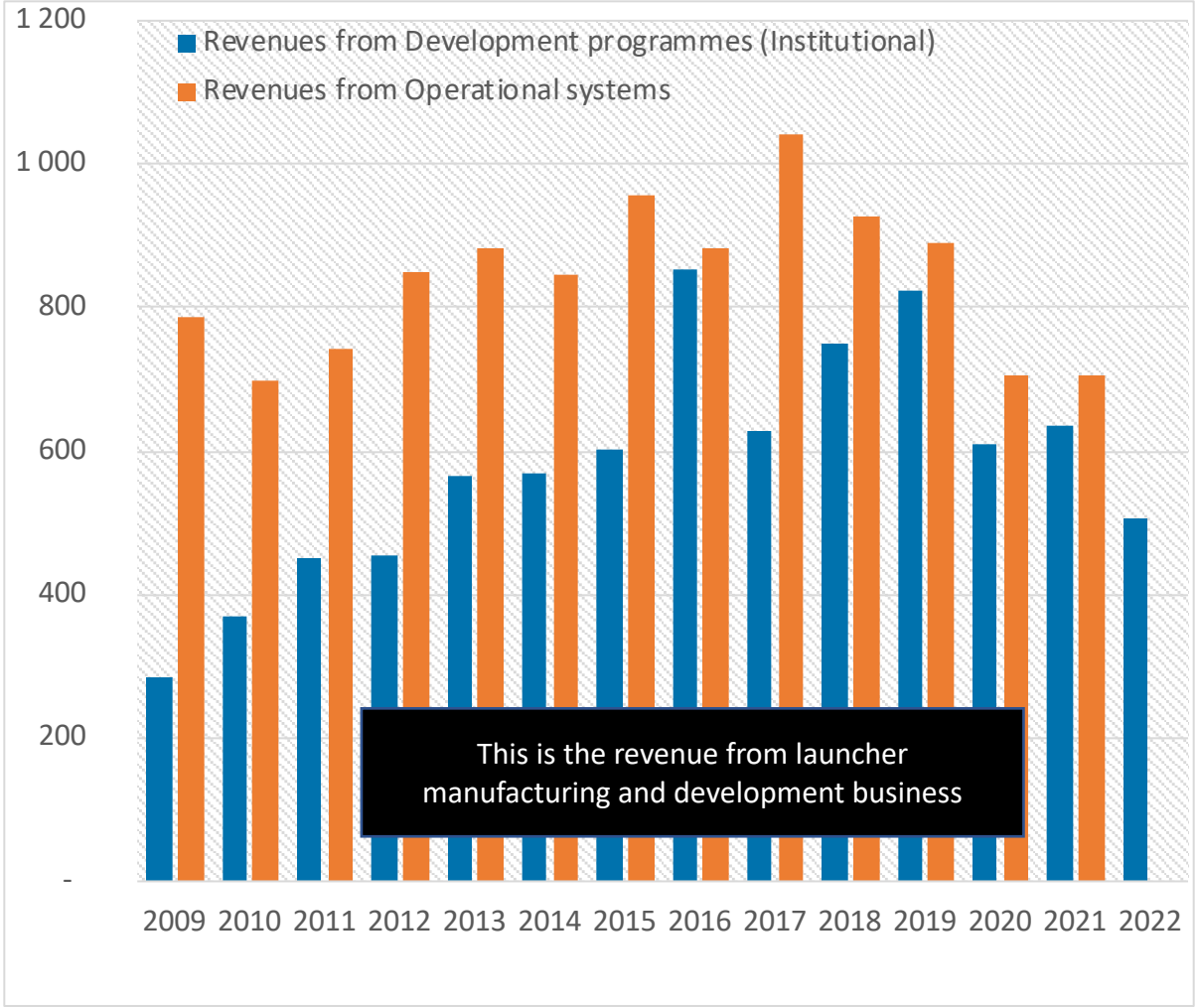


Commercial satellite and ground systems market segments

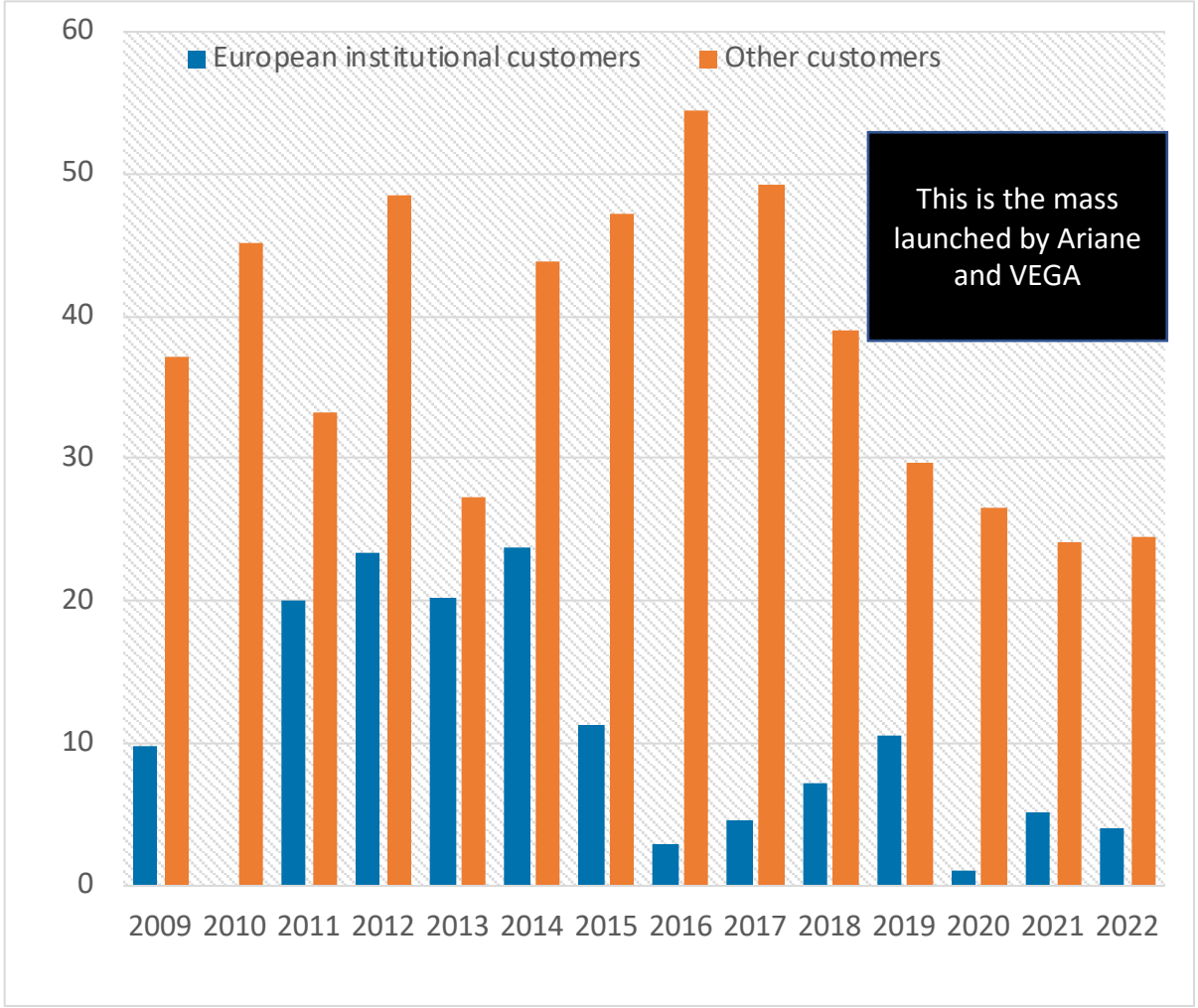


Launcher segment market

Launcher segment revenues by customer segment M€

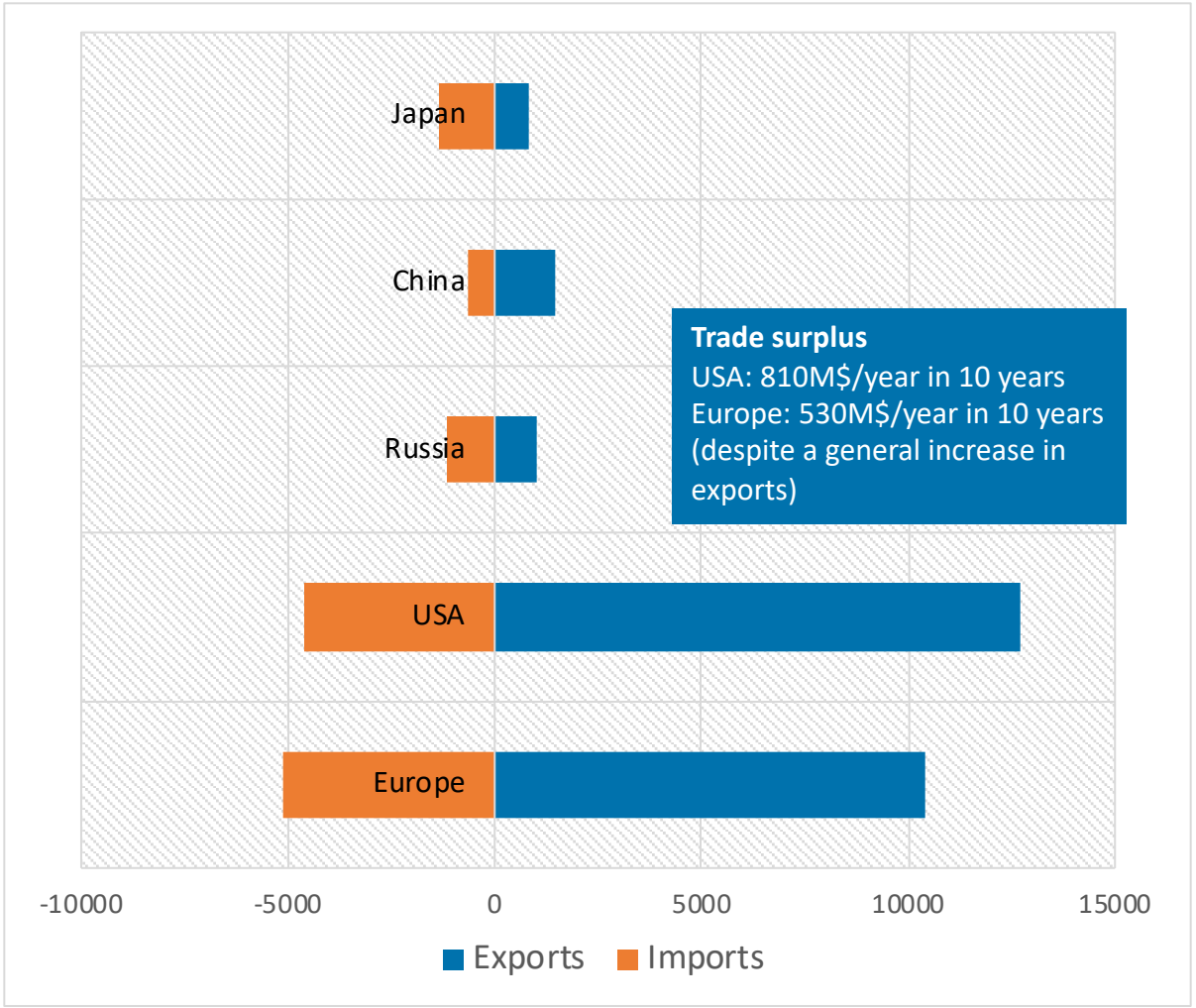


Mass launched by Ariane & Vega by customer segment (tons)

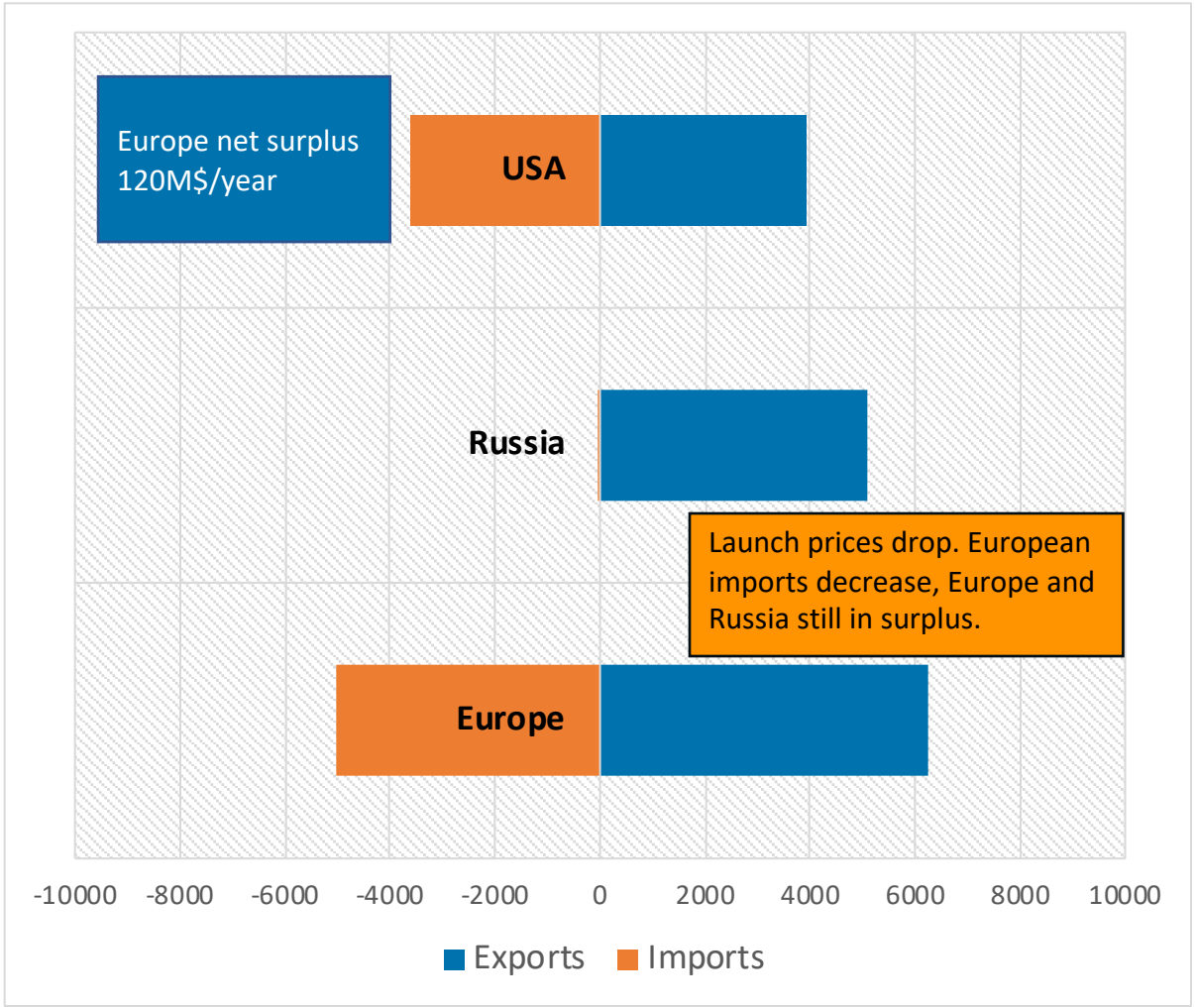


Satellite and Launcher Trade Balance – 2013-2022 – B$ (est.)

Satellite Trade Balance

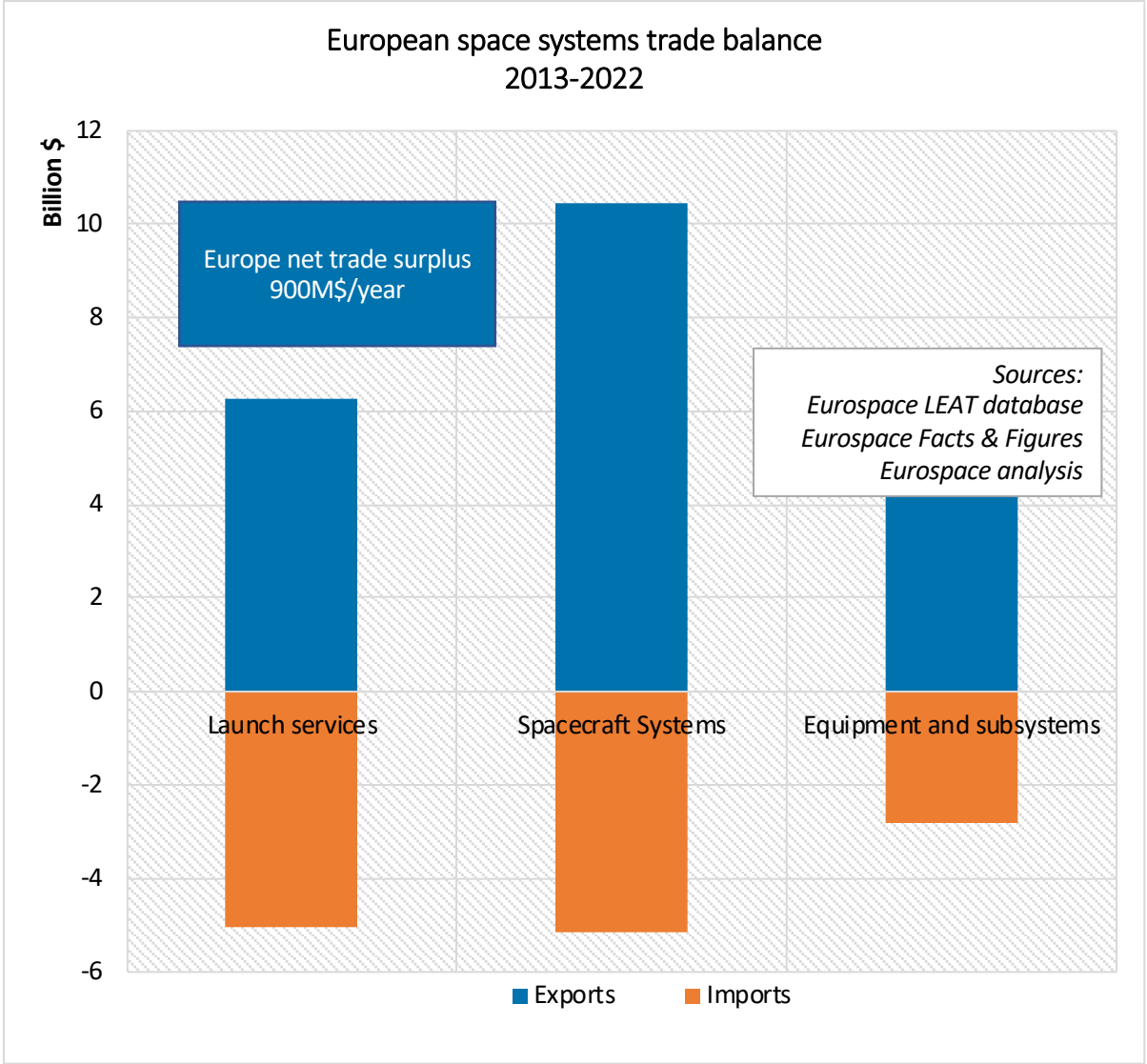


Launcher Trade Balance



European space systems trade balance 2013-2022

- European space systems exports represented **22B$ in the past decade.**
- **The space manufacturing sector is a net positive contributor to the European trade balance**
- The European space industry contributed **an average net surplus of 900M$/year to the European trade balance**
  - Complete satellite systems: 530M$/year
  - Launch services: 122m$/year
  - Equipment and subsystems: 255M$/year
- There is a potential **for improving even more the space systems trade surplus** by:
  - **Reducing** imports:
    - European customers are the largest importers of space systems and launch services worldwide, worth **10,1B$ in the past decade**
    - **Strengthening the European dependence reduction actions**
      - The actions in the past may have already contributed to the reduction of equipment imports **from 3,1B$ in the 2011-2020 analysis to 2,8B$ in the current (2013-2022) analysis**
  - **Promoting** exports:
    - Space systems and launch services exports as a tool for economic diplomacy
    - Competitiveness improvement



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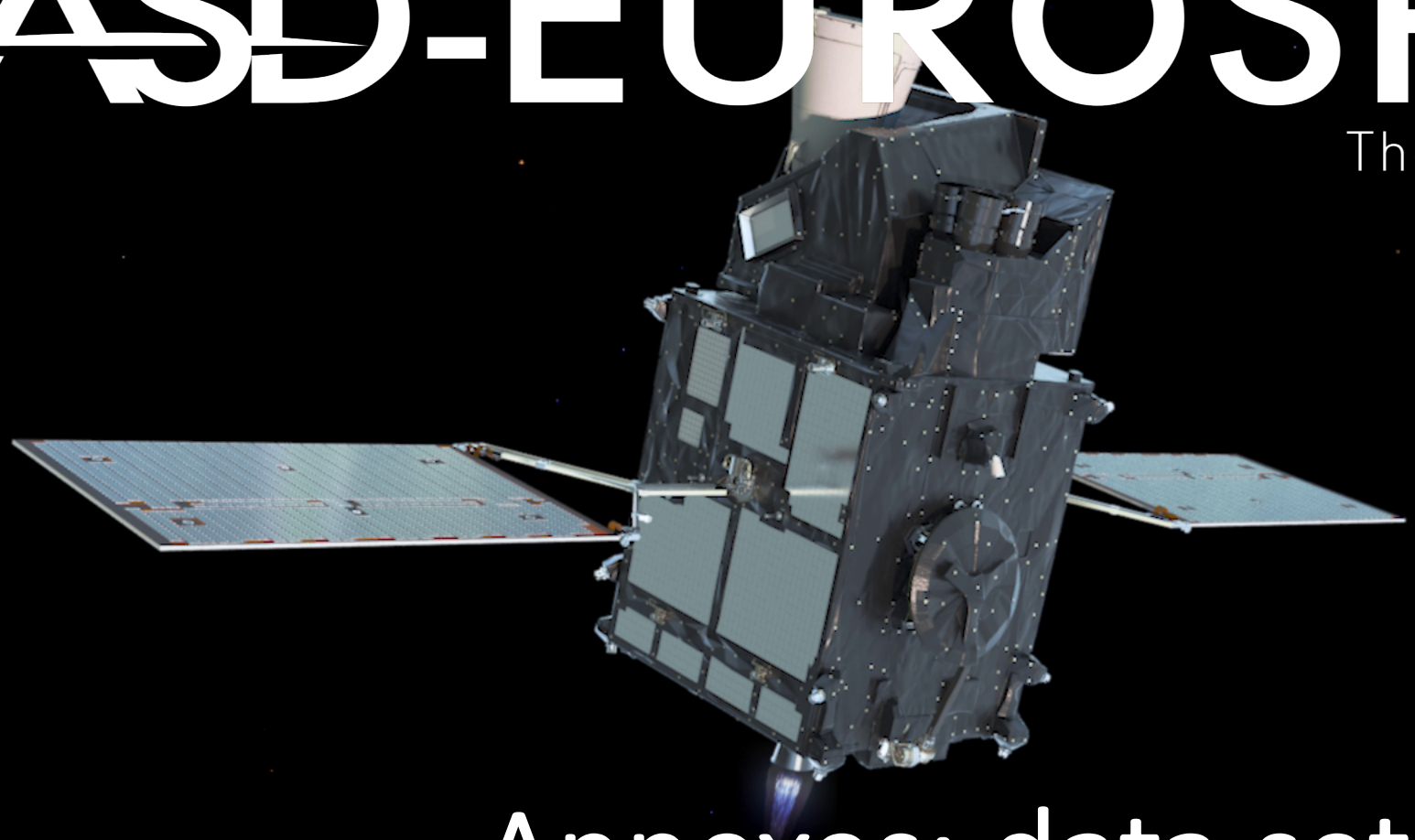
The Space group in ASD



Annexes: data sets

Main data sets

Key figures employment (FTE) and sales (M€)	2020	2021	2022	Var.
Direct industry employment (FTE)	50554	53146	57510	8,2%
Other personnel working on site (FTE)	2402	2422	2197	-9,3%
Total space industry employment (FTE)	52956	55568	59707	7,4%
Final sales (M€ current e.c.)	7725	8606	8257	-4,1%

Key figures customer segments (M€)	2020	2021	2022	Var.
Final sales (M€)	7725	8606	8257	-4,1%
European public customers	4900	5555	5556	0,0%
European private customers	1299	1334	1073	-19,5%
Other/unkown European customers	99	117	104	-10,9%
Public customers RoW	458	459	363	-20,9%
Private customers RoW	942	1087	1132	4,1%
Other/Unknown customers RoW	25	54	28	-47,6%

Main data sets

Final sales by main customer segment (M€)	2020	2021	2022	Var.
Final sales (M€)	7725	8606	8257	-4,1%
Launcher systems	1316	1303	1214	-6,8%
Satellite applications systems	3529	3974	3657	-8,0%
Scientific systems	1130	1347	1403	4,2%
Ground systems and services	1567	1806	1750	-3,1%
Other & Unknown	184	175	232	32,3%

Main data sets and definitions

- **The space manufacturing industry**, a strategic sector embedded in the larger aerospace and defence industry, designs, develops and builds space systems launchers, spacecraft and the related professional ground segment) for public and private customers in Europe and across the Globe.
- **The space industry is at the higher end of an important value-added stream of commercial and public/strategic services**. Space value-added services and their ground segment users (e.g. Copernicus, Galileo, Broadcast and broadband services, geo-information...) generate socio economic benefits and support the development of Europe.
- According to standard definitions the space manufacturing activities do not include service activities such as that of satellite operators (Eutelsat, Inmarsat...) or launch service providers (Arianespace). These entities are customers to the manufacturing industry.
- **The Eurospace annual survey measures European space manufacturing industry revenues and employment. It is supported by all major companies, and is representative of the sector situation.**

Main data sets and definitions – Product segments

- Satellite applications include all sales related to the development and production of systems for future and actual missions in telecommunications, Earth observation and navigation/positioning. Most of the revenues are drawn from the production of operational systems, while a smaller share is associated to technology and system development activities. In the specific frame of long series, satellite applications also include the value of ground systems (control centres, ground antennas etc.). These figures do not include the revenues drawn from satellite operations.
- Launcher systems include all sales relevant to the design, development and production of launcher systems. European launcher systems include the large Ariane system, in operations since 1996, and the smaller VEGA system, in operations since 2012. A small fraction of these revenues is associated to the exports of launcher equipment (e.g. thrusters, fairings) used on non-European launchers. These figures do not include the revenues drawn from launch operations.
- Scientific systems sales include all sales relevant to the design, development and production of scientific spacecraft systems. These spacecraft address missions such as: human spaceflight, planetary exploration, Earth science, astronomy, etc. Almost all of these revenues are associated to government programmes.
- Support activities include all activities required to support the design, development and production of space systems. This category includes a share of hardware and a share of services sales. Hardware sales are associated to the production of electric and mechanical ground segment equipment (EGSE & MGSE) i.e. dedicated equipment required for the test and integration activities of equipment, subsystems and complete systems. Services sales are associated to the delivery of engineering, test and other specialised services to the space manufacturing industry and space systems customers. These services sometimes include also ground control centre operations, in particular for space agencies.

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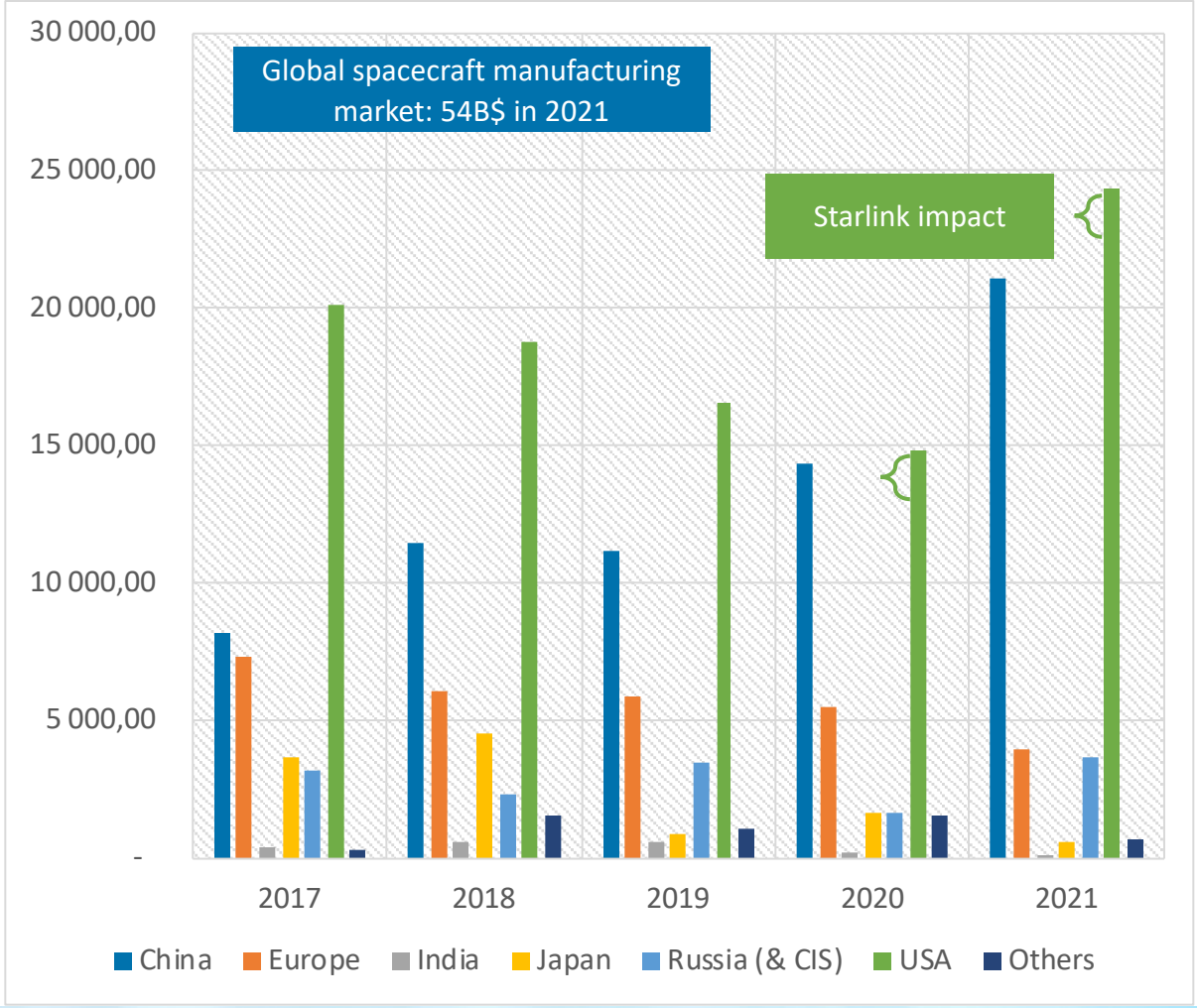
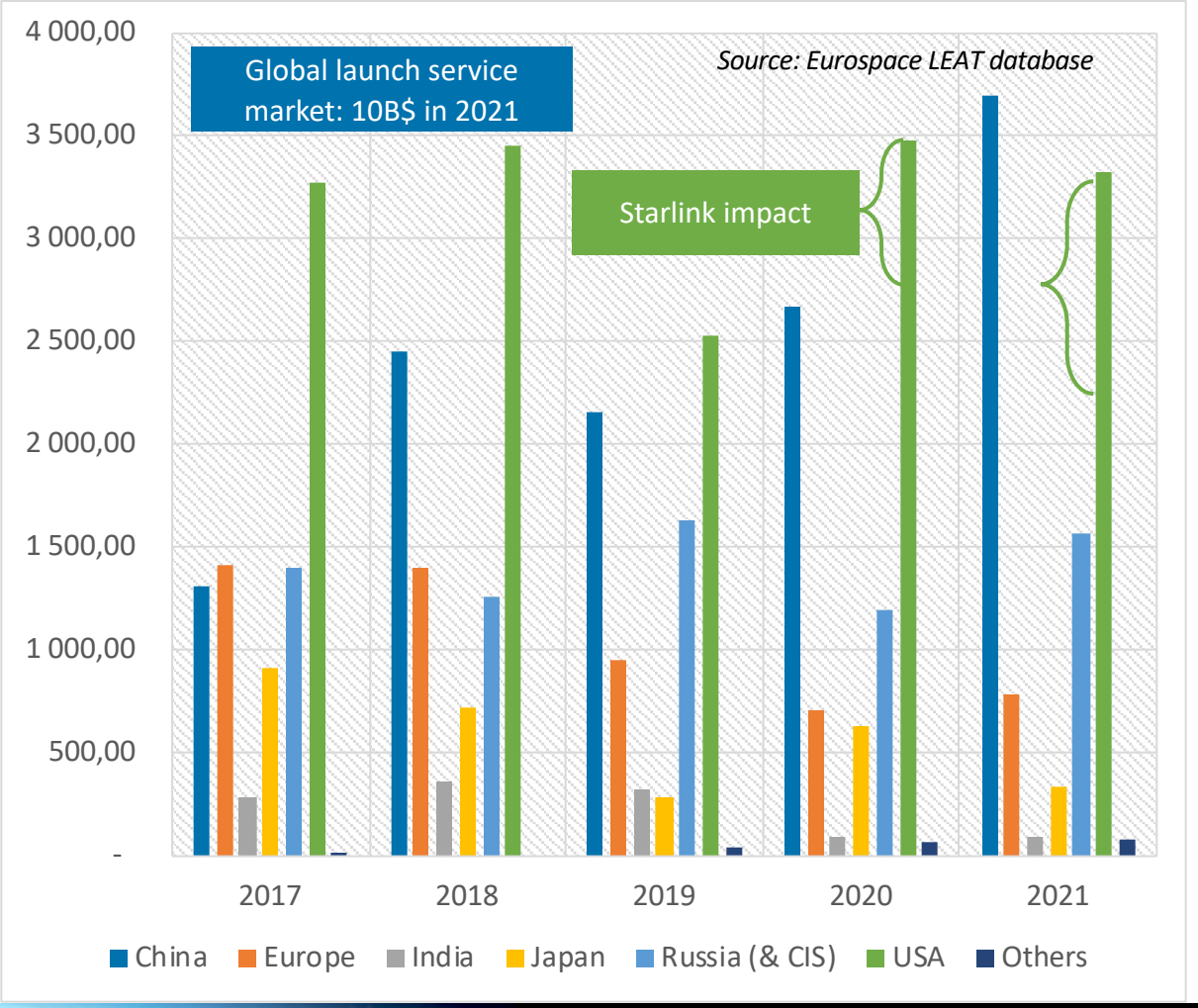
Global Space industry output in 2017-2021 in M$ @PPP

Global Spacecraft Production by region (M$)

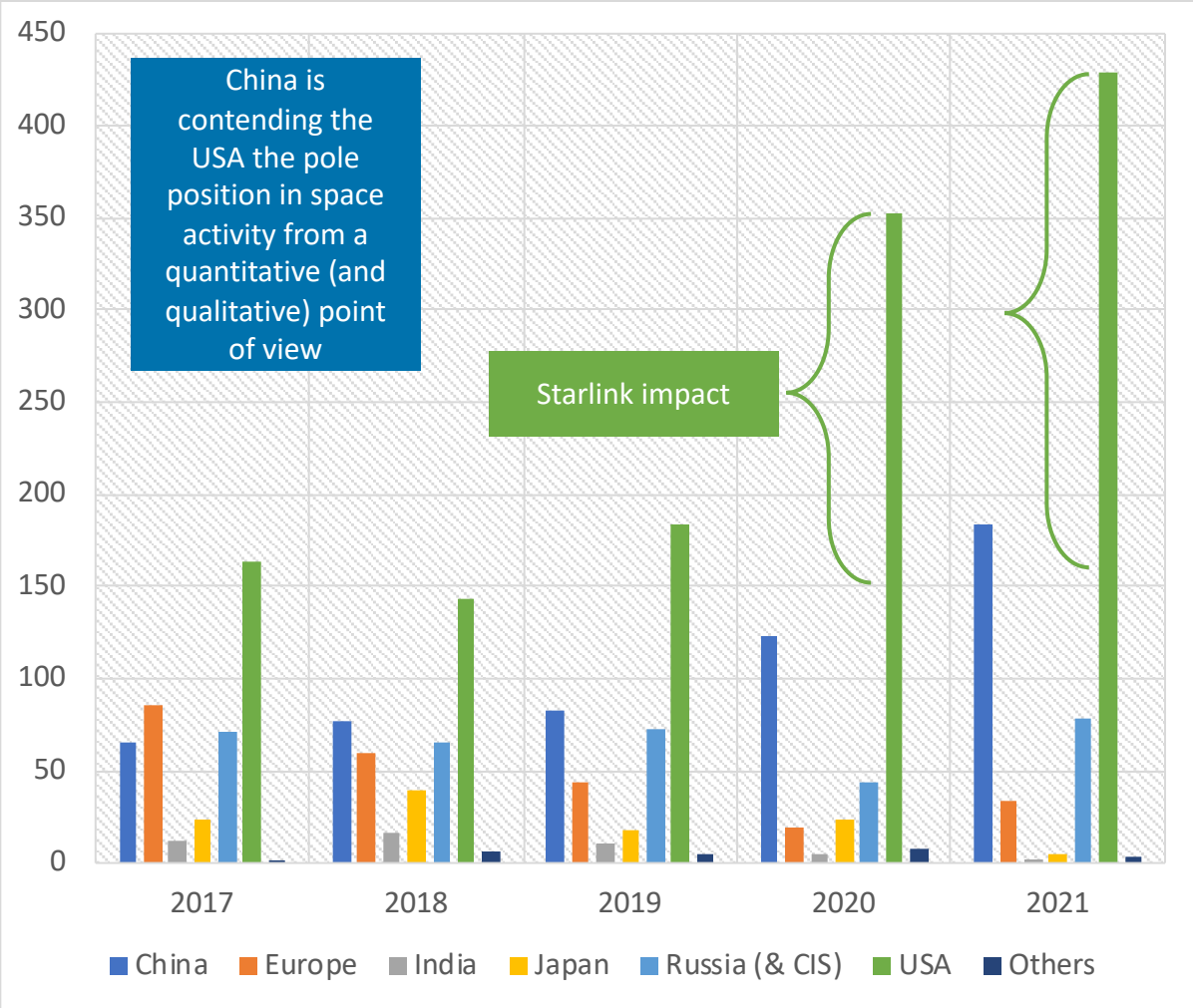


Global Launch Activity by Launcher Region (M$)

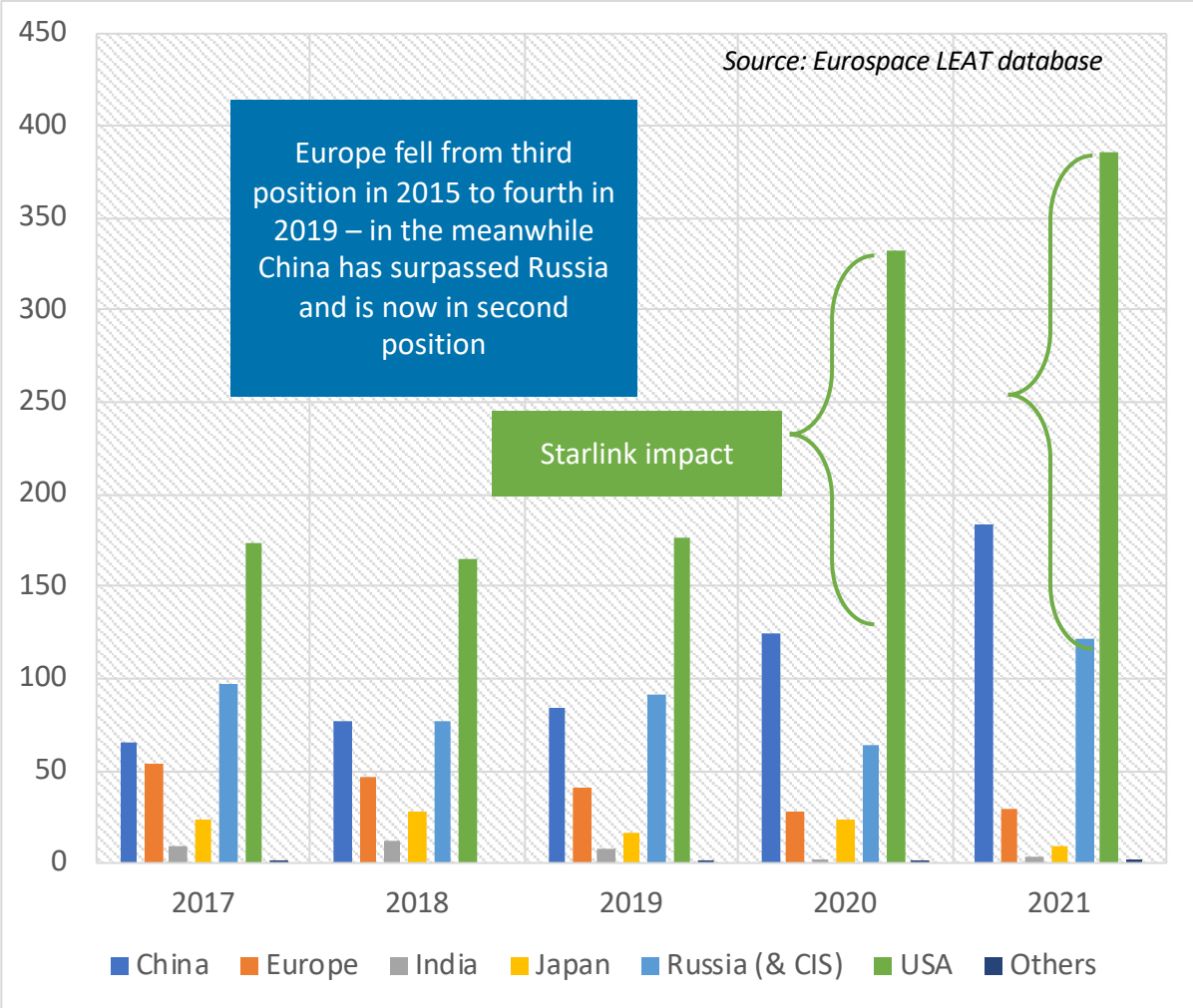


Global Space industry output in 2017-2021 in tons

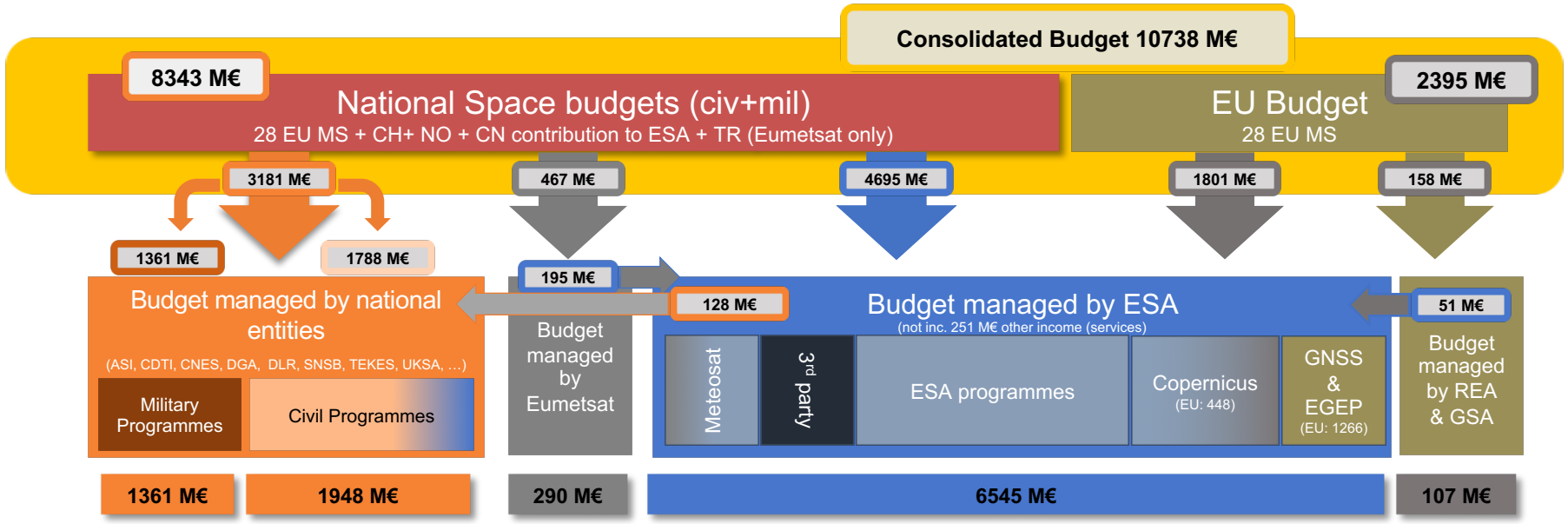
Global Spacecraft Production by region (tons)



Global Launch Activity by Launcher Region (tons)



European space (upstream) budget 2022 in a nutshell



This chart presents the status of public budgets contributing to the funding of UPSTREAM space activities in Europe (e.g. the EU/Horizon Programmes do not include the Market development budgets for Copernicus and GNSS). In addition to identifying budget sources, the chart attempts at identifying the budget transfers between organisations in order to identify the amounts eventually managed by each organisation and limit double counts.
All 'additional' budget sources (i.e. own revenues generated by service activities within the organisations themselves, such as the ESA revenues from its participation in H2020 projects, or CNES revenues from service provision at CSG, or Eumetsat revenues form data sales) have not been considered, since they would be either double counts from public budget sources, either contributions from the private sector, i.e./ not relevant to public funding.