

July 2026. Technology Snapshot

Space technologies in Catalonia

Space technologies in Catalonia. Technology Snapshot

ACCIÓ

Generalitat de Catalunya (Government of Catalonia)



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Prepared by

ACCIÓ Strategy and Competitive Intelligence Unit

Collaboration

Secretariat for Digital Policies

Institute of Space Studies of Catalonia (IEEC)

Barcelona, July 2026

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Space technologies in Catalonia

1 Definition and importance of space technologies

Definition of space technologies

Space technologies encompass the set of activities, tools and resources related to the exploration, research, understanding, management and use of space.

Space technologies open up an economy that transforms access to and use of space into opportunities for business and innovation.

These technologies enable the development of high value-added products and services in fields such as Earth observation, global communications and geolocation, and are driving the creation of startups, new business models and highly competitive business ecosystems.

The space economy is shifting from a niche sector to an omnipresent one, as it generates value across multiple industries and provides solutions to many of the world's most pressing challenges.

Main drivers of growth in space technologies:

1

Reduction in launch costs

2

Continuous innovation and international cooperation

3

Increase in private investment and diversification of funding sources

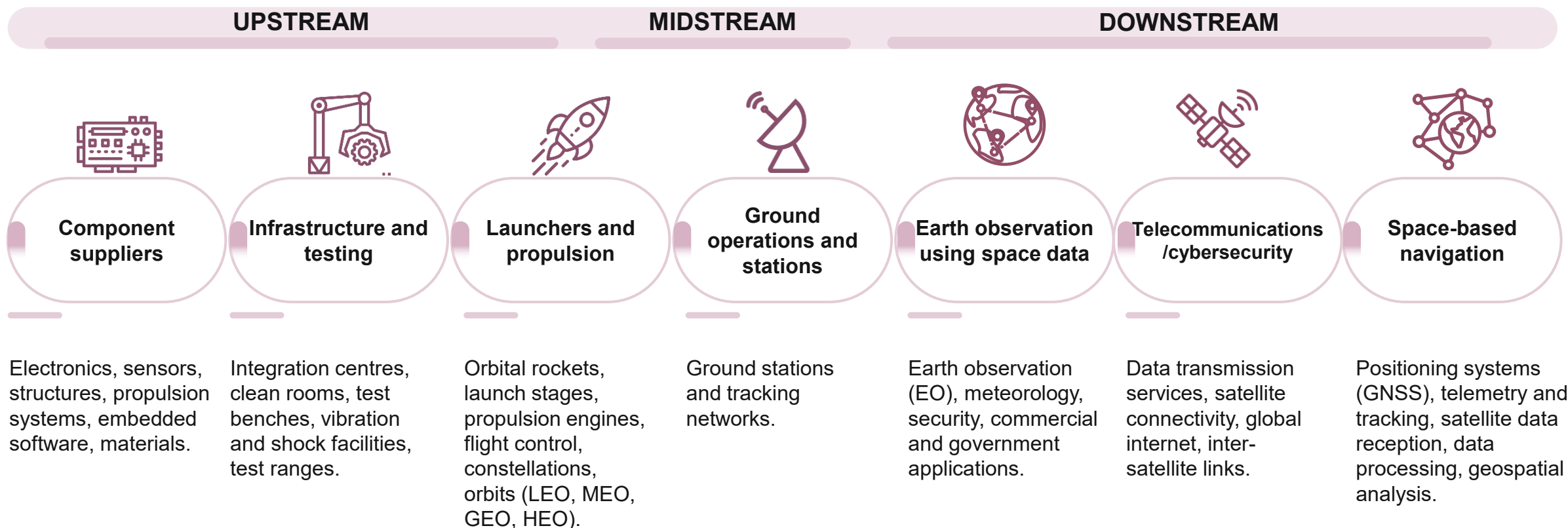
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Expansion of applications



Space technologies value chain

6



Source: own elaboration, based on the Catalonia Space Strategy 2030 and European Space Agency (ESA)

Convergence of space technologies with other technologies

7

Space technologies hybridise with other technologies to optimise their potential.



Artificial intelligence /
big data



Connectivity



Photonics



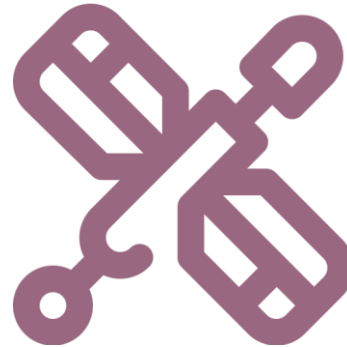
Cybersecurity



Semiconductors



Quantum technologies



Simulation and digital twins



Robotics



Additive manufacturing



Batteries



Advanced materials



Supercomputing



Importance of space technologies

8

Observation and communication

Satellites enable real-time Earth observation and provide essential data for climate management, crop monitoring, disaster prevention and urban planning. They are also essential for ensuring terrestrial communications.

Business opportunity and new markets

Growing interest in space technologies is opening opportunities for startups and investors, with services such as satellite launches, space tourism, asteroid mining and space-data-based applications.



Enabling technology

Space technologies drive other sectors: telecommunications, navigation, logistics, precision agriculture, natural resource management and security. They act as a foundational layer supporting many other industries.

Convergence of technologies

The space sector integrates advances in robotics, artificial intelligence, new materials, propulsion and energy systems, accelerating their transfer to civilian and military industries.

Innovation and research

Space exploration and utilisation are a source of innovation. They require advanced solutions, which often result in patents and new knowledge applicable across other sectors.

Space technologies in Catalonia

2 Applications by demand sector and SDGs

Applications by demand sector of space technologies

10

Space technologies are consolidating as a key infrastructure capable of addressing challenges as diverse as security and defence, environmental and natural resource management, and the development of new forms of mobility and smart cities.



1 Geographical and meteorological analysis



5 Telecommunications and audiovisual



9 Border surveillance and control



2 Monitoring



6 Mobility and logistics



10 Defence



3 Agriculture and aquaculture



7 Research



11 Forestry



4 Security and emergencies



8 Environment, energy and water



12 Smart Cities

Space technologies and the SDGs

11

Space technologies contribute to the Sustainable Development Goals (SDGs) by providing data to monitor ecosystems, manage natural resources, prevent climate risks and improve security and international cooperation.



Detection of illegal activities. Border surveillance and cross-border cooperation. Anti-missile satellites and threat detection.



Soil and climate monitoring. Detection of fires, deforestation and poaching. Monitoring of water stress, soil quality and invasive species.



Monitoring of sea conditions and fishing pressure.



Monitoring of pollution, global warming and the state of glaciers and polar regions.



Crop and aquaculture monitoring. Management of fish stocks and fishing pressure.



Monitoring of crops, soil fertility and climate. Monitoring of fish farms, sea conditions and fishing pressure.



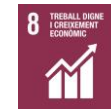
Data on pollution and environmental change. Urban planning using IoT and connectivity.



Monitoring of aquifer status and water stress.



More efficient and sustainable interurban mobility.



Geolocation and asset and fleet management. Efficient mobility, research and innovation.



Radio repeaters, improved connectivity and IoT. International space infrastructure. Geolocation and asset management.



Improved connectivity and IoT access in remote areas.

Space technologies in Catalonia

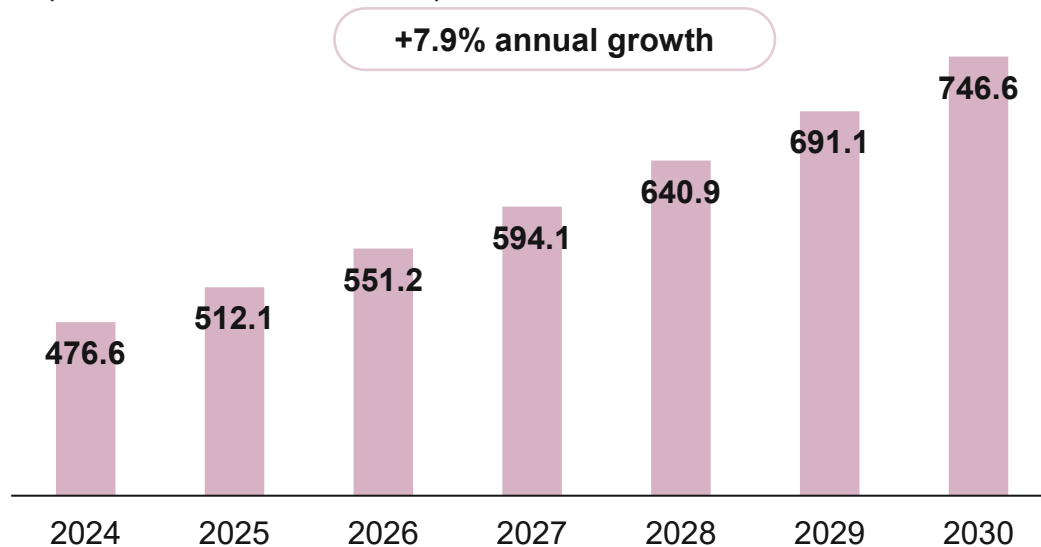
3 Global market for space technologies

Global market for space technologies

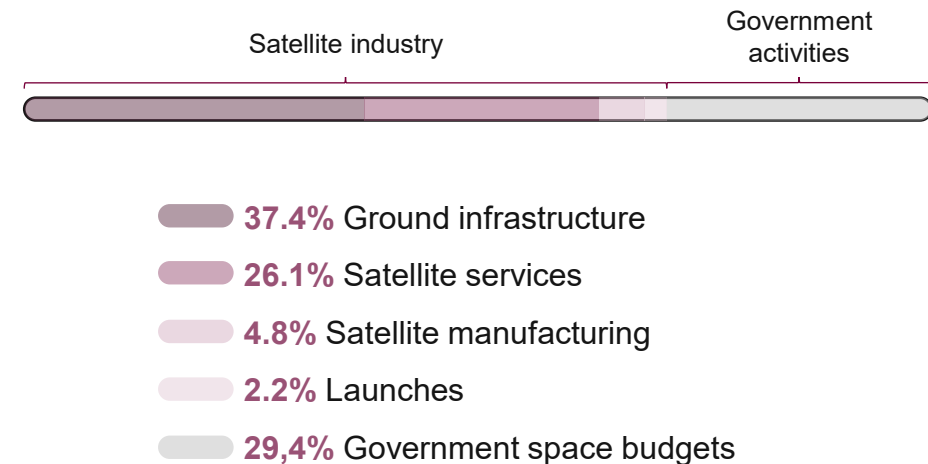
13

The global space technologies market is expected to grow at a rate of **7.9% until 2030**, when it will reach **747 billion US dollars**. **Ground infrastructure** and **satellite services** are the largest segments within the satellite industry.

Market size of space technologies
(in billions of US dollars)



Market size by space technology segment



Major global aerospace and defence companies

14

Companies from the United States are the most prominent in the aerospace and defence manufacturing industry. By revenue, Boeing leads the ranking, ahead of Airbus, Raytheon Technologies and Lockheed Martin.



Airbus, Leonardo and Thales have signed a MoU to create a **European company** aimed at becoming a leader in **the space sector**.

 With a presence in Catalonia

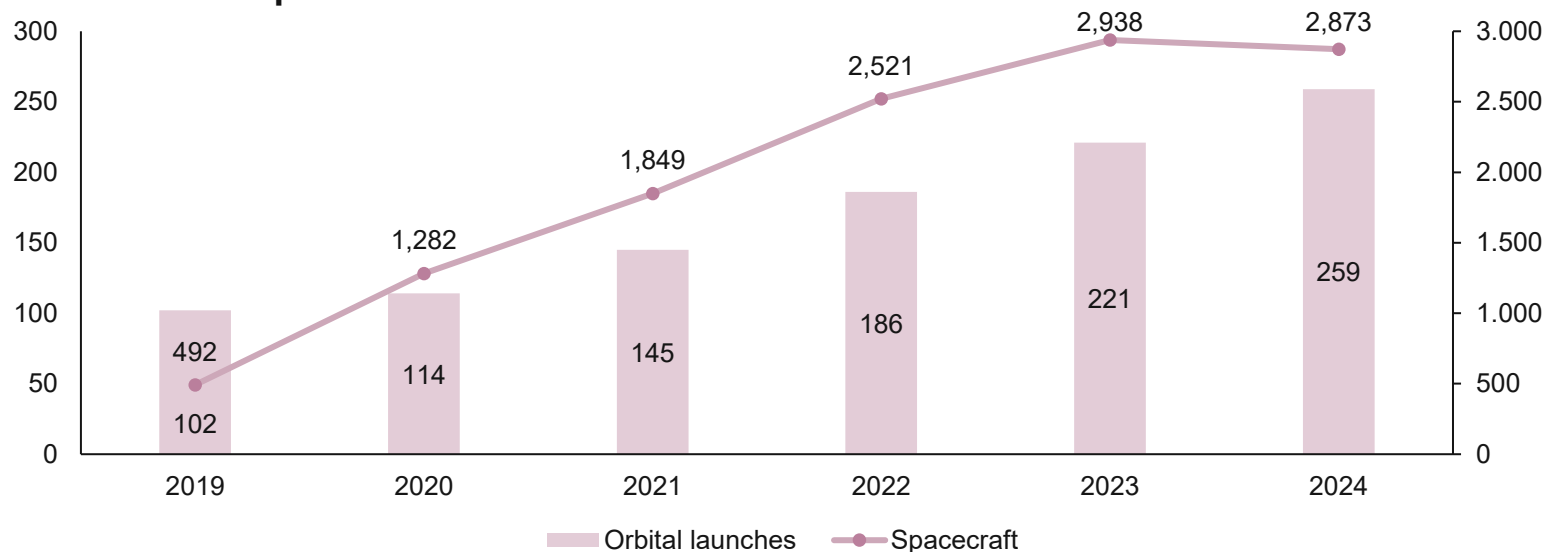
Note: companies ranked by revenue

Space launches

15

Space launches have grown exponentially in recent years, driven especially by commercial launches: in the last six years, **orbital launches have increased by 154%, while spacecraft have increased by 484%.**

Evolution of space launches



68% of orbital launches were carried out by commercial providers in 2024 (16% in 2019).



Almost **60%** of orbital launches take place in the **United States**.

97% of spacecraft are **small satellites** (<1,200 kg).

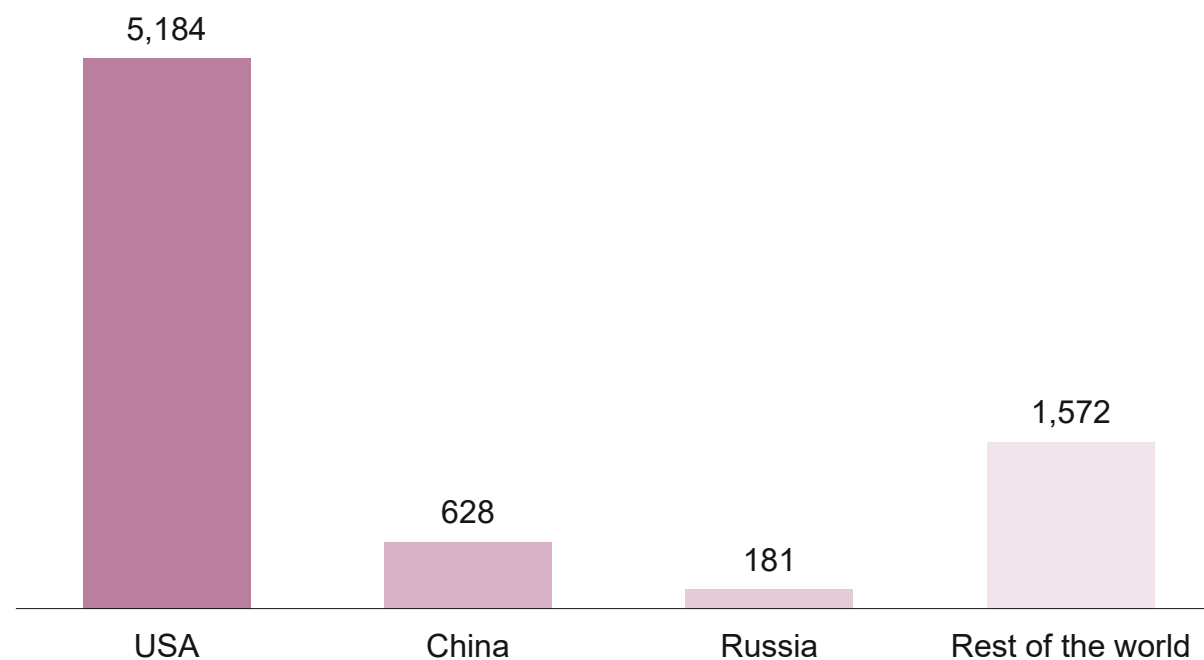
77% of spacecraft are **communication satellites**.

Note: an orbital launch is the act of placing an object into orbit; each launch can carry multiple spacecraft.

Number of satellites in orbit

16

Of the **7,560 active satellites** orbiting the Earth in 2023, **5,184 belonged to the United States**, far ahead of **China (628)** and **Russia (181)**.



Foreign Direct Investment (FDI) in the aerospace sector

Between 2021 and 2025, FDI in the aerospace sector reached **37.54 billion euros**, with **more than 1,200 projects** worldwide. **The last three years have been the most active, reaching record highs** in projects, invested capital and employment.

FDI in the aerospace sector (2021–2025)

Year	Projects	Invested capital (€M)	Employment
2025	355	10,380	41,091
2024	309	9,020	44,578
2023	262	9,650	26,066
2022	183	5,790	11,643
2021	148	2,700	10,027
Total	1,257	37,540	166,649

Countries of origin and destination by projects (2021-2025)



Leading 20 investing companies by projects (2021–2025)

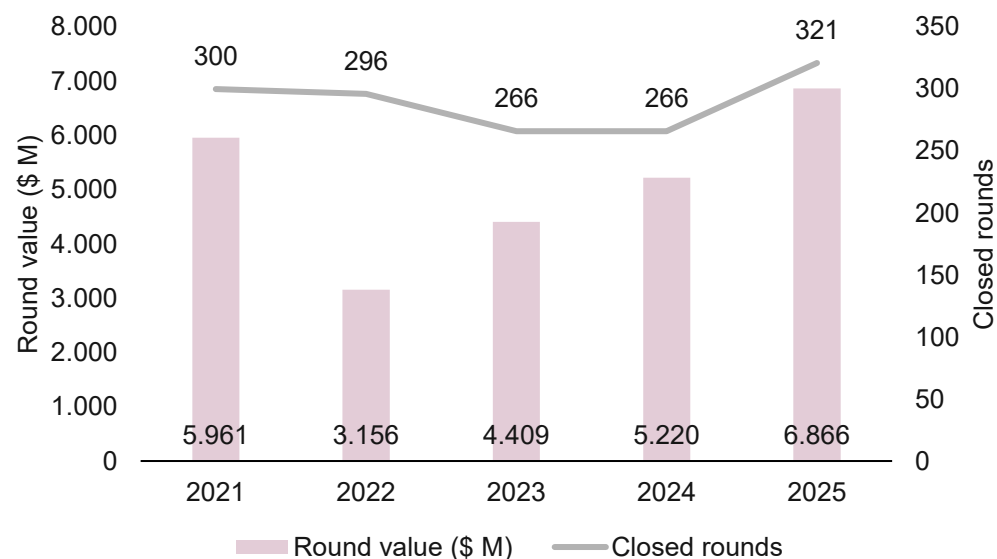


Venture capital in space startups

18

Between 2021 and 2025, **25 billion US dollars** in venture capital have been raised globally in space startups, with US startups as clear leaders.

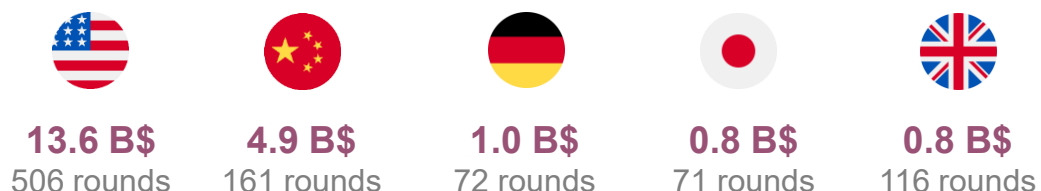
Investment rounds in space startups (2021-2025)



Leading venture capital investors

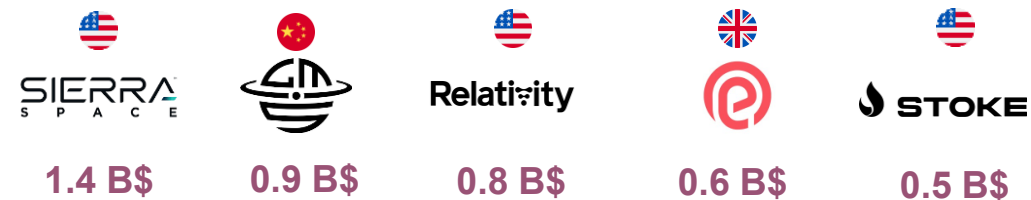


Value and number of completed rounds in leading countries



European startups account for **17.4%** of total investment

Leading startups by value of funding rounds



Source: own work, based on Dealroom

CataloniaConnects

Space technologies in Catalonia

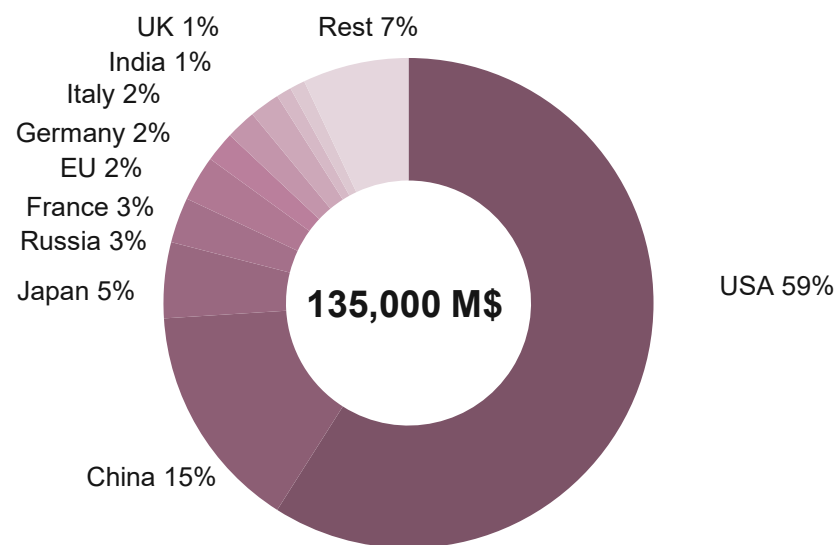
4 International and national initiatives in space technologies

Government expenditure on space programmes

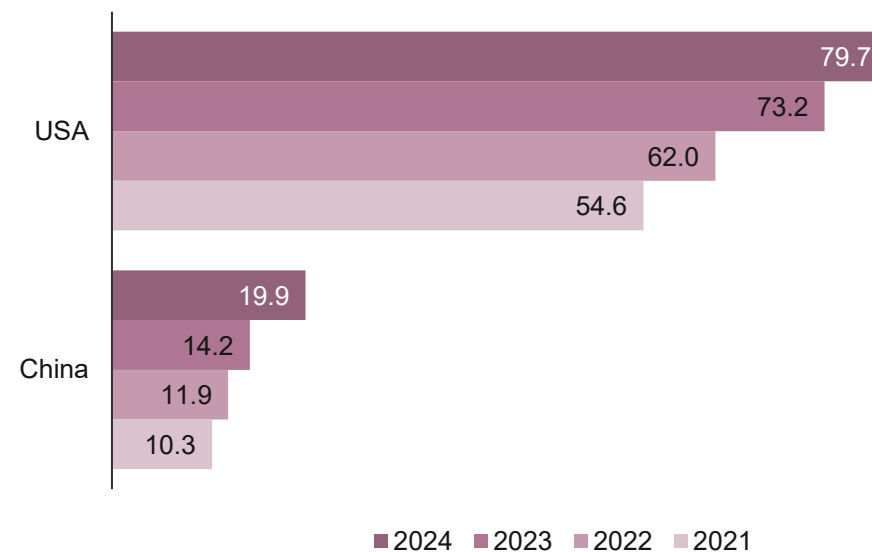
20

In 2024, a **record level of government spending on space programmes** was reached, at approximately **135 billion US dollars**

Space programme expenditure by country (2024)



Evolution of space programme expenditure in the two leading countries (2021–2024)



The United States is the country with the **highest spending on space programmes** (almost 60% of the total), reaching 79,700 million US dollars in 2024, an increase of almost 50% compared to 2021.



China is the **country with the fastest-growing space programme expenditure** in 2024: 40% year-on-year and 93% compared to 2021.

EU space policy

21

The EU space policy aims to boost European technological innovation, create jobs and increase economic competitiveness, as well as maximise benefits for citizens and society. It has recently launched the EU Space Act, a legislative initiative introducing a harmonised framework for space activities across the EU.



Key figures

More than 30

EU satellites dedicated to Earth observation (Copernicus) and positioning, navigation and timing services (Galileo and EGNOS).

10%

share of EU GDP supported by satellite navigation.

Leading-edge capabilities

Galileo is the most accurate satellite navigation system in the world, and Copernicus is the largest provider of space data worldwide.

Areas of action:

Galileo



Global Navigation Satellite System (GNSS) providing positioning, navigation and timing services.

EGNOS



European Geostationary Navigation Overlay Service enabling the use of GNSS signals in aviation.

Copernicus



Earth Observation (EO) and monitoring based on satellite and non-space data.

Space Situational Awareness



Monitoring and protection of space assets.

IRIS2



Secure satellite communications system

GovSatCom



Satellite communications for public authorities.

Cassini



Support for European entrepreneurs, startups and SMEs in the space industry.

R&D&I



Programmes supporting research and innovation in the space sector.



Key agency for the development and investment in European space capabilities.



Generalitat de Catalunya
Government of Catalonia

Source: European Commission

CataloniaConnects

EU space policy: the EU Space Act

22

The EU Space Act is a legislative proposal from the European Commission that introduces a harmonised framework for space activities across the EU. Presented on 25 June 2025 and currently subject to negotiations between the European Parliament and the Council of the EU, it aims to ensure safety, resilience and environmental sustainability, while also boosting the competitiveness of the European space sector.



Identified needs

- Harmonisation of regulation**
From 13 national regulatory frameworks to a single European framework.
- Security of space services**
Space infrastructure and the services it enables are a key pillar of the European economy.
- Safer orbital environment**
To manage the expected large-scale deployment of space objects in the coming years.
- Sustainability of the space economy**
The carbon footprint of space activities remains too high.
- Protection of space systems**
To address the increasing risk of cyberattacks targeting satellites.
- Expansion of future markets**
Space activities are opening new opportunities across multiple sectors and industries.

Proposals

SECURITY

Minimisation of space debris generation, including the deorbiting of satellites at end of life, and mandatory sharing of satellite position data.

RESILIENCE

Adapted regulatory requirements to ensure cybersecurity across space activities, including risk assessment throughout the full lifecycle of space missions.

SUSTAINABILITY

Lifecycle assessment to improve the environmental performance of space missions, and the creation of shared databases on environmental impacts to support evaluation and decision-making.

The development of the Spanish space sector is structured through several strategic instruments and public support programmes, promoted by the Government of Spain in coordination with the Spanish Space Agency (AEE), the Ministry of Science, Innovation and Universities, and the Ministry of Defence.

Instruments and support programmes

PERTE Aerospace



The PERTE Aerospace, launched in 2022, mobilises more than **4,500 million euros** up to 2025, with approximately 2,200 million euros in public funding. Its objective is to strengthen industrial and scientific capabilities in areas such as Earth observation, satellite communications, launch systems and navigation technologies. The programme supports both large companies and startups.

Space Strategic Plan 2023–2025



This plan, coordinated by the AEE, defines national priorities in the space field, including improved governance, international cooperation and alignment with European strategies such as Copernicus and Galileo. It also promotes the creation of a diversified industrial ecosystem and the consolidation of a specific regulatory framework for space activities.

International cooperation programmes



Spain is an active member of the European Space Agency (ESA) and participates in joint programmes with the European Commission, the European Union Agency for the Space Programme (EUSPA) and other Member States. These programmes strengthen Spain's presence in satellite missions, Earth observation and navigation systems, and provide access to competitive European funding.

Support for innovative SMEs



The AEE and the Centre for the Development of Industrial Technology (CDTI) promote specific funding lines for SMEs and startups.

Space policy in Spain: the Spanish Space Agency (AEE)

The Spanish Space Agency unifies all space policy and coordinates services and activities in the sector to ensure the strategic action of the Government of Spain in the field of space.



Competences

- Research and technological development**, in addition to representing Spain in international organisations and managing national contributions to the ESA.
- Coordination** of defence-related space programmes.
- Design and implementation** of space, technological and industrial policies, strategies and programmes.
- Development of the national space policy**, including the definition of national objectives in research, Earth observation and communications, in coordination with other policy areas (security, industry, mobility, etc.).

Challenges

- Need to define specific regulations** for launches, space traffic management, orbital debris, communications spectrum, safety and cybersecurity.
- Development of industrial capabilities** for the design and manufacture of satellites, payloads, propulsion systems and other technologies, in order to reduce external dependence.
- Public-private coordination**, with clear funding lines and regulatory stability to encourage investment.
- Integration** of Spain into EU space policies and international agreements, including participation in the ESA and alignment with harmonised regulatory frameworks.

Space technologies in Catalonia

5 Space technologies in Catalonia

Space technologies business mapping in Catalonia (I)

26

No. of companies

83

x 3.2

compared to 2019

Revenue

237 million euros

Direct employment

1,822 jobs

 **88.0%** are SMEs.

 **48.2%** generate more than 1 million euros in revenue and **20.5%**, more than 10 million euros.

 **50.6%** are less than 10 years old.

 **28.9%** are startups.

 **32.5%** are exporters.

 **13.3%** are subsidiaries of foreign companies.

Inside the **value chain**, the companies are mainly in:

Earth observation	39.8%
Technology providers and consultancy	28.9%
Telecommunications/cybersecurity	20.5%
Component suppliers	16.9%



Note: the data on companies refers to 2026; turnover and number of employees, to 2024 (or latest available). Companies can be located in more than one link within the value chain.

Space technologies business mapping in Catalonia (II)

27



Note: companies are placed in the value chain segment where they are most active.

Sources: ACCIÓ, Secretariat for Digital Policies and IEEC

Space technology ecosystem stakeholders

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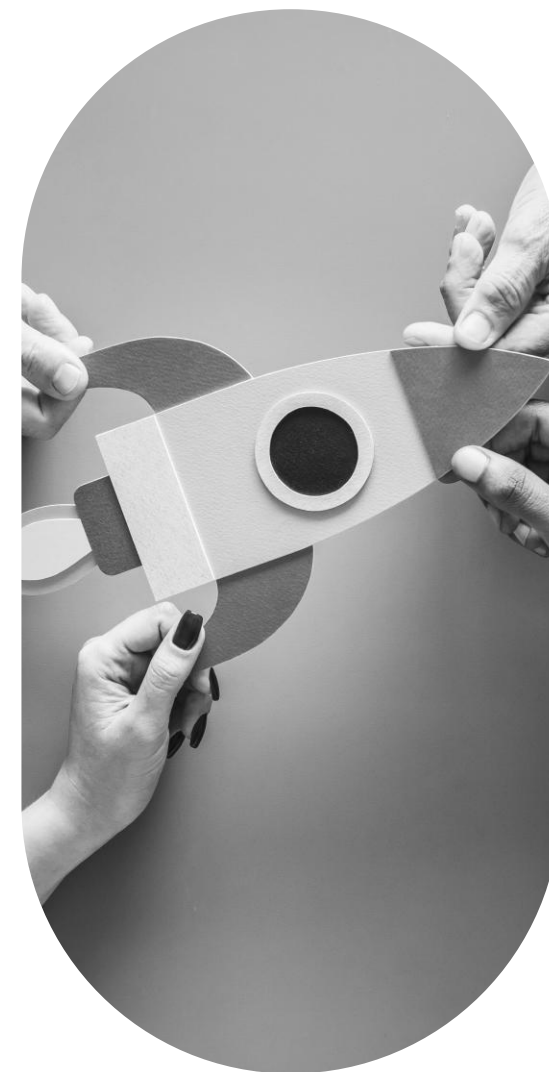
Technology centres, research centres and universities



Associations, clusters and events



Institutions and Public Administration



Font: ACCIÓ

Fem avui l'**empresa** del demà

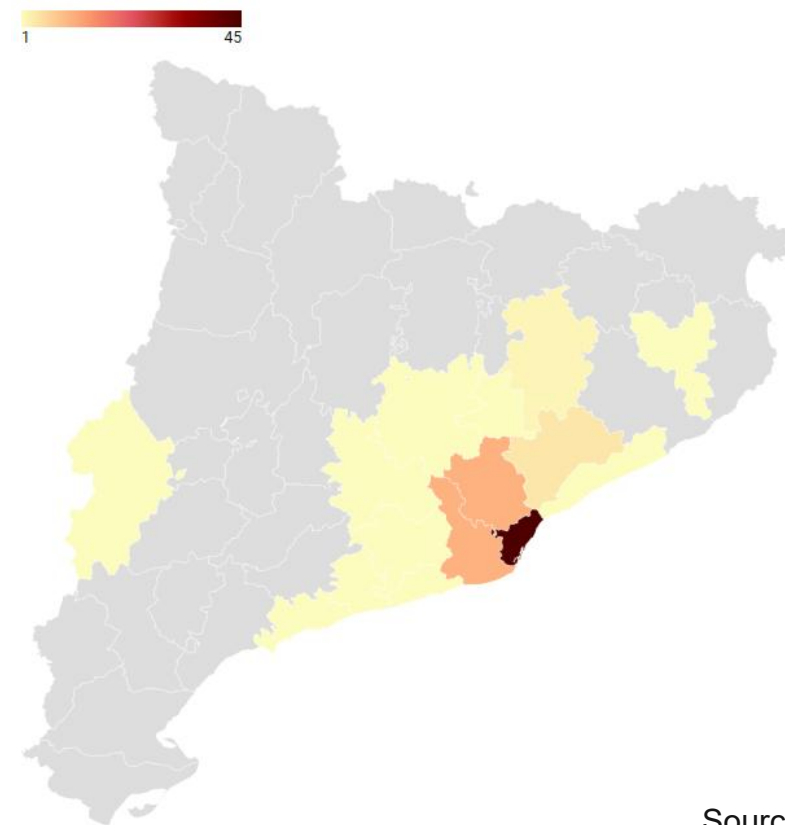
Territorial distribution of space technology companies

74.7% of space technology companies are located in the Barcelona Metropolitan Area (AMB).

By municipality, the main hubs are **Barcelona (42)**, **Sant Cugat del Vallès (5)**, **Castelldefels (4)** and **Hospitalet de Llobregat (3)**.

County distribution of space technology companies

County	No. of companies	% of total
Barcelonès	45	54.2%
Baix Llobregat	11	13.3%
Vallès Occidental	11	13.3%
Vallès Oriental	4	4.8%
Osona	2	2.4%
Others	10	12.0%
Total	83	100%



Note: the Metropolitan Area of Barcelona includes 36 municipalities in the counties of Barcelonès, Baix Llobregat, Vallès Occidental and Maresme.

Startup funding by Catalan Space Startups

Barcelona is the **4th city in the EU** in attracting venture capital in space technologies in the last five years (2021-2025). Specifically, **6 startups** have obtained **US\$113 million** in **13 rounds of financing**.

Venture capital in Barcelona in space technologies (2021-2025)

13 rounds of financing

US\$113 million

Funded Startups (2021-2025)

SATELIOT
Space • Connecting • 5G IoT

Pangea

**KREIOS
SPACE**

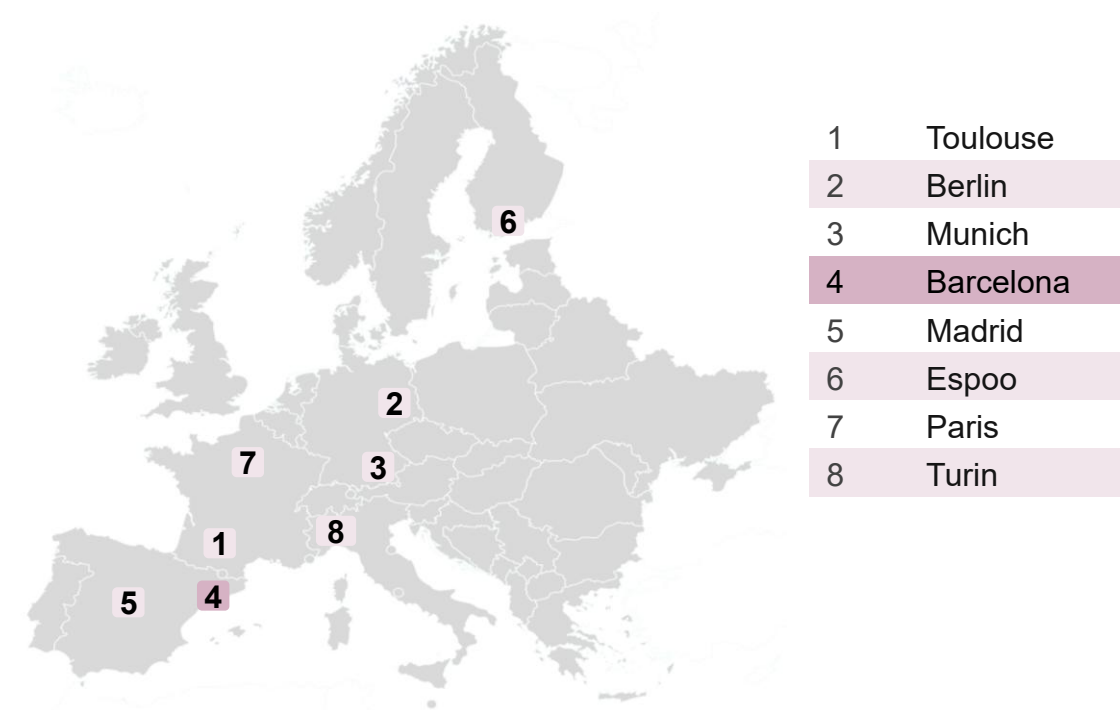
AISTECH

FREGATA SPACE

earthpulse!

In 2026, Sateliot opened a €100 million funding round to deploy its 5G satellite constellation.

Top 8 EU cities attracting venture capital in space technologies (2021-2025)



Source: ACCIÓ, based on Dealroom

Recent milestones in Catalonia's Space sector

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2020

Approval of the **NewSpace Strategy of Catalonia**

First edition of the **NewSpace Economy Day**

2021

Launch of **Enxaneta**, the first nanosatellite placed into orbit by the Government of Catalonia

Creation of the **NewSpace community** within the Digital Catalonia Alliance (DCA)

Reactivation of the **ESA BIC Barcelona**, with the Generalitat as part of the consortium

2022

Evolution of the NewSpace Economy Day into the **NewSpace Economy Congress**

Catalonia's first participation in the **International Astronautical Congress** in Paris with its own pavilion

2023

Launch of **Menut**, the second nanosatellite, for Earth observation

Launch of **Minairó**, the third nanosatellite, an orbital laboratory for 5G NB-IoT communications testing

Participation of Catalonia for the first time at the **Space Tech Expo** in Bremen with its own pavilion

2024

Creation of the **Phi-Lab Net Spain** consortium to connect research, industry and investors

Launch of the **3Cat-4 nanosatellite** by the UPC NanoSat Lab, the latest of the five satellites launched in the 3Cat series since 2016

Creation of the accelerator **Catalonia Space Accelerator**

2025

Approval of the **Catalonia Space 2030 Strategy**

Launch of **6GStarLab**, Europe's first 6G satellite in low Earth orbit dedicated to research

Deployment of the **Visor Menut** to openly access imagery from the Earth observation satellite mission

2026

Promotion of the bid to host the **International Astronautical Congress in Barcelona** in 2029

Transformation of the NewSpace Economy Congress into the **Space Economy Congress**

Launch of the **Sant Esteve Teleport**

Catalonia Space Strategy 2030

32

The Catalonia Space Strategy 2030 reflects the commitment to mobilise the entire sector, from large corporations to startups, SMEs and R&D&I agents, with the aim of promoting a diverse, robust and productivity-oriented ecosystem, with **companies as the main driver of growth and value creation**.

Missions

Catalonia, a hub for the origin and connection of the space economy

- 1 Build a dynamic, collaborative, competitive and innovative environment that connects Catalonia with Europe's leading space hubs.

Contribute to strengthening European space technology capabilities

- 2 Promote space infrastructure, services and data architectures that contribute to national and European efforts in the space sector and become a key lever for the digital transformation of Catalonia's strategic sectors.

Expand constellations of talent with Catalan DNA

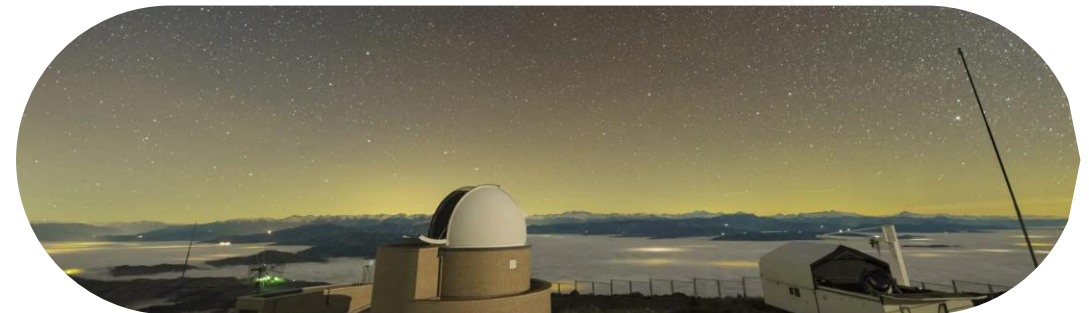
- 3 Make Catalonia an attractive European destination for space talent and supporting disruptive entrepreneurship.

A robust system driving the growth of the sector and the country

- 4 Promote a transparent, efficient and participatory governance model that guarantees sustainability, territorial cohesion and social impact — ultimately ensuring the sustained success of the space sector in Catalonia.

Catalonia Space 2030: a global brand, a shared source of pride

- 5 Position Catalonia as an international benchmark in the space sector, with a strong, inspiring and globally recognised brand.



Key institutions: the Digital Catalonia Alliance

The Digital Catalonia Alliance (DCA) is an initiative that brings together Catalonia's leading emerging technology sectors through an innovative, visionary, disruptive and collaborative alliance of technology communities. Among the technologies promoted, Space stands out, with more than 130 members.

The DCA aims to become a driving force behind Catalonia's digital economic sectors and, to this end, works to achieve this by:

- Bringing together leading companies active in digital innovation to create a dynamic ecosystem that contributes to the digital economy.
- Addressing common challenges faced by companies in the sector, both small and medium-sized enterprises.
- Supporting companies and society in adopting technological change.
- Aligning with the Sustainable Development Goals (SDGs) and the territory's strategic challenges.

The DCA offers services such as sector dynamisation, visibility, event organisation, synergies and multitechnology collaboration, access to knowledge, technology and infrastructure, access to funding sources and strategic relationships.



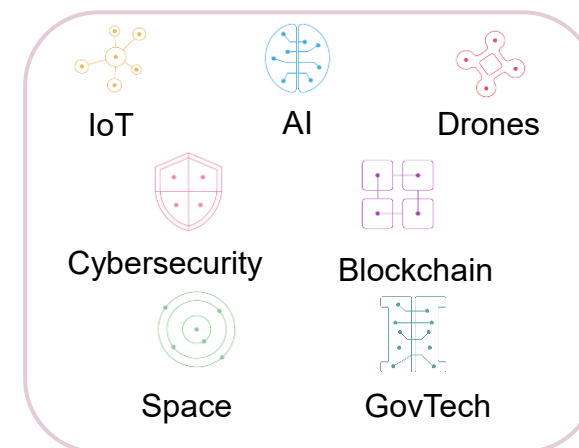
700+ members



Initiative led by the **Government of Catalonia**, in collaboration with **i2CAT**



Promoting seven technology verticals:



Source: DCA

Key institutions: Institute of Space Studies of Catalonia (IEEC)

The **Institute of Space Studies of Catalonia (IEEC)** is the leading institution within Catalonia's space ecosystem, dedicated to research, development and innovation in space science and technology.

It is structured around four research units linked to Catalan universities and research centres:

- **ACE-ICC-UB** (Astrophysics and Space Sciences).
- **CERES-UAB** (Space Studies and Research Centre).
- **CRAE-UPC** (Aeronautics and Space Research Centre).
- **ICE-CSIC** (Institute of Space Sciences).

This decentralised structure enables multidisciplinary work across fields such as Earth observation, astrophysics, fundamental physics and space instrumentation.

Among its main facilities, they stand out:

- The **Sant Esteve Teleport**, Catalonia's first satellite operations centre with on-site industrial activity. The facility was established by the Secretariat for Digital Policies under the Catalonia Space Strategy 2030 and is operated by the Institute of Space Studies of Catalonia (IEEC).
- The **Montsec Observatory** (OdM). Located in the Catalan Pre-Pyrenees, it combines advanced telescopes with a ground station used to receive and calibrate satellite data.

The institute also promotes the **Catalonia Space Sector Promotion Area (APEC)**, which aims to structure and strengthen the development of the space sector in Catalonia and advance knowledge in related fields, in line with the Catalonia Space Strategy promoted by the regional government. Its objective is to grow the ecosystem by strengthening national capabilities in the medium and long term and promoting international collaboration, while maintaining a commitment to social responsibility principles.



Sources: Catalan Institute of Space Studies and Government of Catalonia

Key institutions: Lleida–Alguaire Airport space hub

Lleida–Alguaire Airport is undergoing a transformation to incorporate a **space hub**, integrating several infrastructures and strategic space-related projects that strengthen the technological value chain.



Among these initiatives, a rocket **engine testing centre** stands out. Awarded to Pangea Aerospace in collaboration with the Government of Catalonia, the facility will initially include a test bench for subcomponents (igniters, injectors and materials), with plans to develop a larger test bench for engines of up to 500 kN of thrust.

In addition, an agreement between **Catalan Airports and the Institute of Space Studies of Catalonia (IEEC) has been signed** to design a broader project that includes an industrial park and a training centre for space companies, as well as a dedicated business incubator.

The **incubator** aims to attract at least ten new aerospace and aeronautics companies within two years, while boosting technological and industrial development in the region.



Sources: Government of Catalonia, Catalan Airports, Lleida Airport and press materials

Key institutions: ESA BIC Barcelona

The ESA Business Incubation Centre (BIC) Barcelona is the **first European Space Agency (ESA) incubator in Spain**. Founded in 2014, it is based at the UPC Campus in Castelldefels.

The incubator's objective is to support **the creation of companies whose business models are based on the use of space systems** or technologies for terrestrial applications.

In this way, it aims to benefit the **entrepreneurial and business ecosystem**, support **local talent**, add value to the **region's scientific and technical knowledge**, and generate **new opportunities** for both companies and universities.

The call for applications is **permanently open** within a programme promoted by the Polytechnic University of Catalonia (UPC), the Mediterranean Technology Park and the Government of Catalonia.

Since its creation, it has incubated leading Catalan companies in the sector:



Sources: ESA BIC Barcelona and UPC

Initiatives in Catalonia: the Phi-Lab Net

The **Phi-Lab Net** is an initiative aimed at catalysing innovation and the commercialisation of space technologies that help mitigate and adapt to the effects of climate change.



Phi-Lab
NET

Spain

The ESA Phi-Lab NET Spain programme is endowed with more than €13 million, co-financed by the Government of Catalonia and the European Space Agency (ESA) through the Spanish Space Agency.

ESA-funded projects:

- **WAVESS** (Spascat) integrates Earth observation data with measurements from unmanned vehicles to improve coastal mapping, bathymetry and coastal monitoring.
- **RESCAT** (isardSAT + Lobelia/Eurecat) is a platform to monitor the Ebro Delta and measure variables such as coastal erosion, saltwater intrusion and biodiversity.
- **SKOP** (Geoskop) combines satellite observations with artificial intelligence to generate long-term climate forecasts, particularly for the energy sector.
- **Supply Chain Risk Simulator** (EarthPulse) is a tool to anticipate and model risks in agricultural supply chains affected by climate change.

Locally funded projects:

- **REMOT** (Spascat, Agropixel and Raventós Codorníu) optimises vineyard irrigation management by inferring plant water stress using Earth observation data.
- **TIAFA** (MOAI, Enel) enables automated detection of water leaks via satellite data to improve infrastructure resilience.
- **SAPIC** (Lobelia, L'Electra and AESF) provides an advanced wildfire prevention service in Catalonia using Earth observation and climate data.

The **Phi-Lab Net Spain** consortium is coordinated by the **Institute of Space Studies of Catalonia (IEEC)** and includes institutions such as i2CAT, ICGC, UPC, UAB, the Barcelona Supercomputing Center and ICFO. It is supported by the Spanish Space Agency and the Government of Catalonia.

Initiatives in Catalonia: nanosatellite launches

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Catalonia is developing a strategic presence in the space sector through the deployment of its own nanosatellites.

The Enxaneta, Menut and Minairó missions are key milestones in this strategy, with objectives related to technological innovation, public services and strengthening the local space ecosystem.

ENXANETA

The first Catalan nanosatellite, launched in March 2021 from the Baikonur Cosmodrome (Kazakhstan). It is a 3U CubeSat designed primarily to provide Internet of Things (IoT) connectivity services, including data collection from sensors located in remote or low-coverage areas.

MENUT

The second nanosatellite promoted by the Government of Catalonia, focused on Earth observation (EO). Although full imaging and service data are calibrated after launch, the project contributes to expanding satellite Earth observation capabilities over the territory.

MINAIRÓ

The third nanosatellite, launched on 15 April 2023 from Vandenberg (USA) aboard a Falcon 9 rocket, into an orbit at approximately 550 km above the Earth. It is an IoT communications nanosatellite developed by Sateliot and managed by i2CAT in collaboration with the Government of Catalonia. It is the first Catalan satellite to use the 5G NB-IoT standard from space. Its intended applications include crop monitoring, water resource management, logistics tracking and universal connectivity during flyovers of Catalonia, approximately every five days.



This constellation of satellites is expected to expand (targeting eight active satellites by 2030) to improve service coverage and revisit frequency over the territory.

Initiatives in Catalonia: launch of Europe's first low Earth orbit 6G satellite

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The **6GStarLab** satellite, led by the research centre i2CAT, is a pioneering open laboratory in Europe that will accelerate the development of future 6G connectivity and open research and innovation in non-terrestrial networks.

Launched in 2025, it will enable **real experiments in space and remotely**, in order to advance the development of new technological applications such as **telemedicine, distance learning, wildfire and natural disaster prevention and mitigation**, and **autonomous mobility**.

Much of the 6GStarLab experimentation will focus on **non-terrestrial networks** (NTN), which use nodes such as satellites or high-altitude platforms to transmit information, complementing traditional terrestrial networks. The integration of terrestrial and non-terrestrial systems creates hybrid networks that improve communication performance and provide a seamless user experience, which is essential to **advance towards 5G-advanced and future 6G systems**.

Headed by i2CAT, the mission is developed within the Catalan space ecosystem: **the satellite has been manufactured by Open Cosmos** and involves the **collaboration of MWSE and the NanoSat Lab group at UPC**.

The project, funded by the Government of Spain through the NextGenerationEU funds and by the Government of Catalonia under the Catalonia Space Strategy 2030, activates the Catalan space ecosystem and deploys a **pioneering optical ground station in Móra la Nova** (Terres de l'Ebre), co-financed by the Nuclear Transition Fund.



Sources: Government of Catalonia and i2Cat

Opportunities



Boost the space technology sector



Technology transfer and cross-sector innovation



Earth observation and environmental sustainability



Attract talent and international investment



Data economy and new business models

Challenges



Scalability and industrial consolidation



Infrastructure and own launch capabilities



Data regulation and governance



Sustainability and space debris management



Attract and retain specialised talent

Opportunities to promote space technologies in Catalonia

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Boost the space technology sector

- The Catalonia Space Strategy 2030 must consolidate the foundations of a dynamic industrial and scientific ecosystem that connects emerging companies, technology centres and universities. These synergies should enable progress towards an economic model based on innovation and the generation of high value-added space services.



Technology transfer and cross-sector innovation

- Space technologies act as catalysts for innovation in fields such as artificial intelligence, high-performance computing (HPC), connectivity and communications. This convergence promotes knowledge transfer between strategic sectors such as mobility, energy, health and the environment.



Earth observation and environmental sustainability

- The use of space data offers new opportunities for environmental monitoring, water resource management and climate resilience. Catalonia hosts reference projects in this field, such as ESA's Phi-Lab Barcelona or initiatives led by companies such as Lobelia, isardSAT, Spascat and EarthPulse.



Attract talent and international investment

- Catalonia has infrastructure, research capabilities and initiatives that strengthen its international positioning and can attract startups and investors in the space sector.



Data economy and new business models

- The access to space data and its exploitation through digital platforms enables the development of new high value-added services in areas such as logistics, precision agriculture and infrastructure management.

Challenges to promote space technologies in Catalonia

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Scalability and industrial consolidation

- Many companies in the sector are early-stage startups or SMEs. Stable financing mechanisms and innovative public procurement programmes are needed to ensure growth and international competitiveness.



Infrastructure and own launch capabilities

- There is currently no national orbital launch capability. Initiatives such as the Alguaire SpacePort project are promising, but require sustained investment and a clear regulatory framework to achieve technological autonomy.



Data regulation and governance

- It is necessary to move forward in defining a clear regulatory framework for the management and interoperability of space data, with the aim of ensuring its security, traceability and alignment with European standards under the Copernicus and Galileo programmes.



Attract and retain specialised talent

- The development of the sector requires highly qualified professionals in aerospace engineering, data science, AI and telecommunications. Strengthening university education and university-industry collaboration is a priority.



Sustainability and space debris management

- The increase in nanosatellites and constellations requires the implementation of Green Space policies to reduce orbital debris, minimise collision risks and promote responsible practices throughout the lifecycle of space systems.

Thank you!

More information about the sector and related news:
<http://catalonia.com/space-technologies>



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