



The European Space ecosystem

An orientation-guideline for start-ups within the space industry



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Welcome to this Guideline

Welcome to the European Ecosystem Guideline provided by SpaceUp, the project consortium that executes the European Space Academies. The European Ecosystem provides various opportunities to connect, collaborate and get resources for your start-up. "SPACEUP", the accelerating project financed by the EU Framework programme for Research and Innovation, called Horizon 2020, is offering expertise to young entrepreneurs and start-ups within the European space sector and is helping to find solutions to their needs through customized coaching services, one-to-one dedicated solution modules, networking, as well as matchmaking events.

The following document presents stakeholders within the European space ecosystem to connect and collaborate with. We make no claim for completeness, but mention very important stakeholders and provide examples for each topic.

With the vision focused on beneficial collaboration for maximizing the overall benefit for the European space-tech start-up ecosystem, the following activities have been addressed at European as well as at regional level. Mostly, the key stakeholders which are introduced within this guideline are connected to the following four pillars of SpaceUp's Value proposition:

- **Technology transfer**, i.e. "cross-fertilisation" and "cross-technology solutions from space to non-space actors"; evaluation of the best technology transfer instrument for the start-up venture; analysis of other industries products and services and adapt it to their business and vice versa.
- **Funding and financial opportunities**, i.e. (but not limited to) helping space tech entrepreneurs to improve their business strategy and to present their business to investors; overview of the opportunities offered by the European Funds in the space sector, with particular attention to Horizon 2020 (SME Instrument), including tips and tricks on proposal writing under H2020; different activities to perform in order to succeed with a crowdfunding campaign.
- **Human resource development** i.e. (but not limited to) solutions to develop the internal competences and skills, and to find and take on board people from the market, understanding better the local labour market,
- **Business development** i.e. (but not limited to) sensitizing, educating and empowering the start-ups on the business model concept and the analysis as well as the development of business models in practice; an in-depth understanding of the start-ups business model; support in detailing a specific option to further develop their business model.

The following organisations and their projects are powerful opportunities within Europe's space industry. Please find further information in the link to the addressed website and feel free to contact us if we can help you with providing the first contact or otherwise.

Have fun reading and don't hesitate to get back to us if you have questions.

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List of Abbreviations

A

ACS.....Aerospace Cluster Sweden
 AEDCPAED Cluster Portugal
 AIPAS.....Associazione delle Imprese per le Attività Spaziali
 ASBAviaSpace Bremen e.V.
 ASDAssociation AeroSpace and Defence Industries
 ASDUT SG Aerospace, Space and Dual-Use Technologies Sector Group, Aerospace, Space and Dual-Use Technologies Sector Group
 ASI..... Agenzia Spaziale Italiana
 AZO.....Anwendungszentrum GmbH Oberpfaffenhofen, Anwendungszentrum GmbH Oberpfaffenhofen

B

BA..... Business Angels
 BBAA.....Berlin-Brandenburg Aerospace Allianz
 BMWi Bundesministerium für Wirtschaft und Energie

C

CASTRA.....Cluster Aerospace Technologies, Research And Applications
 CBK.....Centrum Badań Kosmicznych
 CDTICentro para el Desarrollo Tecnológico Industrial
 CenSec.....Center for Defence, Space & Security
 CIRA Centro Italiano Ricerche Aerospaziali
 CNESCentre national d'études spatiales
 COSME.Competitiveness of Enterprises and Small and Medium-sized Enterprises, Competitiveness of Enterprises and Small and Medium-sized Enterprises
 CSA..... Canadian Space Agency

D

DAC..... Distretto Aerospaziale della Campania
 DLR.....Deutsches Zentrum für Luft- und Raumfahrt
 DTA..... Distretto Tecnologico Aerospaziale

E

EACEuropean Astronauts Centre
 EACPEuropean Aerospace Cluster Partnership
 EARSC.....European Association of Remote Sensing Companies
 EBAN.....European Business Angels Network
 EBN..... European BIC Network
 EBRD..... European Bank for Reconstruction and Development
 ECEuropean Commission

ECSAT.....European Centre for Space Applications and Telecommunications
 EEN.... Enterprise Europe Network, Enterprise Europe Network
 EIBEuropean Investment Bank
 EIC.....European Innovation Council
 EIF.....European Investment Fund
 EIPP1 The European Investment Project Portal
 EO.....Earth Observation
 EPEuropean Parliament
 ERDFEuropean Regional Development Fund
 ESA.....European Space Agency
 ESAC.....European Space Astronomy Centre
 ESNC European satellite navigation competition
 ESOEstonian Space Office
 ESOC..... European Space Operations Centre
 ESRE..... Association of European Space Research Establishments, Association of European Space Research Establishments
 ESTEC European Space Research and Technology Centre

F

FLAG.....Flemish Aerospace Group
 FP7 7th Framework Programme for Research and Technological Development
 FTI.....Fast Track to Innovation

G

GIS.....Geographical Information Systems
 GLAE .Groupement luxembourgeois de l'aéronautique et de l'espace
 GNSS..... Global Navigation Satellite System
 GVSE-Lux ... Greenvision Systems Environmental - Lux

H

HNWIHigh-net-worth individual
 HTGF High-Tech Gründerfonds

I

IAC International Astronautical Congress
 IASP International Association of Science Parks and Areas of Innovation
 ICT.....Information and Communications Technologies
 INCAS National Institute for Aerospace Research "Elie Carafoli"
 INTA..... Instituto Nacional de Técnica Aeroespacial
 Invega.....Investicijų ir verslo garantijos

IR4I..... Innovation & Research for Industry
ITT Invitations to Tender

K

KETs.....*Key Enabling Technologies*

L

LINPRA ... Association of Lithuanian engineering and
technology companies
LIST Luxembourg Institute of Science and
Technology
LR BW *Forum Luft- und Raumfahrt Baden-
Württemberg*
LSA..... Lithuanian Space Association

M

Maks..... Mezhdunarodnyj aviatsionno-kosmicheskij
salon
MVP *Minimum Viable Product*

N

NASANational Aeronautics and Space Administration
NCP *National Contact Point*
NEREUS *Network of European regions using space
technologies*
NLR..... *National Aerospace Laboratory*
NOK *Norwegian Krone*
NOSA..... *Norwegian Space Agency*
NSV *NewSpaceVision*

O

OEM..... Original Equipment Manufacturer
ONERA *Office national d'études et de recherches
aérospatiales*

R

R&D *Research and Development*
RAL Space..... *Rutherford Appleton Laboratory Space*
REs..... *Research Establishments*
RPAS..... *Remotely Piloted Aircraft Systems*

S

S3Smart Specialisation Strategy
S4S *SME4SPACE*
SMEs *Small and Mid-sized Enterprise*
SoXSA..... *Scottish Centre of Excellence in Satellite
Applications*
STFC *Science and Technology Facilities Council*
STP..... *Science, Technology And Research Parks*
SWE-CIC *Swedish Composite Innovation Cluster*

U

UKRI..... *United Kingdom's Research and Innovation
network*
UN SDGs *United Nations Sustainable Development
Goals*

V

VARIO *Vlaamse Adviesraad voor Innoveren &
Ondernemen*
VLAIO *Flanders Innovation & Entrepreneurship*
VRI *Vlaamse RuimtevaartIndustrie*
VZLU *Výzkumný a zkušební letecký ústav*

W

WFG BGL..... *Wirtschaftsförderungsgesellschaft
Berchtesgadener Land*

1 EUROPEAN SPACE NETWORKS

Networks are helping business owners and entrepreneurs to build a reputation within the related ecosystem, connect to the important stakeholders and build-up alliances with potential partners within research, production and others. Europe holds a very large network within the European Space industry as the European Commission is supporting the European space sector and space-tech and the related industries are emerging.

The most known organisation is the ESA– the European Space Agency, which is specialized in science & exploration, safety & security access to space, ground stations and applications like data relays. ESA is an international organisation with 22 Member States. ESA is responsible for implementing and coordinating the European Space programmes.

Other networks such as Pegasus Europe focusing on Research and therefore connecting a various amount of well-known and reputed aerospace universities and currently has 28 members in 11 different European countries. As well, ESRE – the Association of European Space Research Establishments is focusing on Research by connecting the key research institutes for space science.

Nereus for example, acting as the Network of European Regions Using Space Technologies, is offering a dynamic platform where all European regions can collaborate to improve their public policies for the benefit of their citizen, currently having 26 regions on-board and a growing group of associate members representing the academic research and private sector. Many other networks are following this example and are connecting the private, academic, governmental, research and public sector to use scale effects and create diverse innovation networks.

As innovation is an important keyword within the space industry, especially for the new space and deep technology, networks like EBN, are creating ecosystems for innovation with many different types of organisations, coming from different locations and different business areas to use the advantage of diversity and cross-functional as well as cross-regional open innovation.

1.1 EUROPEAN SPACE AGENCY

Name:	European Space Agency
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

The European Space Agency (ESA) aims to shape the development of Europe's space capability and wants to ensure that the investment in space continues to deliver benefits to the citizens of Europe and the world. 22 Member States are part of ESA. By coordinating the financial and intellectual resources of members, ESA's job is to draw up the European space programme and carry it through. ESA's programmes are about finding out more about Earth, its immediate space environment, our Solar System and the Universe, as well as to develop satellite-based technologies and services, and to promote European industries. ESA also works closely with space organisations outside of Europe.

Countries involved: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland and the United Kingdom. Slovenia is an Associate Member. Canada takes part in some projects under a cooperation agreement. Bulgaria, Croatia, Cyprus, Malta, Latvia, Lithuania and Slovakia have cooperation agreements with ESA. ESA's headquarters are in Paris, which is where policies and programmes are decided. ESA also has sites in many European countries, each of which has different responsibilities:

- EAC, the European Astronauts Centre in Cologne, Germany;
- ESAC, the European Space Astronomy Centre, in Villanueva de la Canada, Spain;
- ESOC, the European Space Operations Centre in Darmstadt, Germany;
- ESRIN, the ESA Centre for Earth Observation, in Frascati, near Rome, Italy;
- ESTEC, the European Space Research and Technology Centre, Noordwijk, the Netherlands; ECSAT, the European Centre for Space Applications and Telecommunications, Harwell, Oxfordshire, United Kingdom; ESA Redu Centre, Belgium;

ESA also has liaison offices in Belgium, USA and Russia; a launch base in French Guyana and ground/tracking stations in various parts of the world.

Activities: ESA's mandatory activities are space science programmes and the general budget. Each Member State decides in which optional programme they wish to participate and the amount they wish to contribute.

Link: <https://www.esa.int/ESA>

1.2 EUROPEAN ASSOCIATION OF REMOTE SENSING COMPANIES

Name:	European Association of Remote Sensing Companies
Territorial Area:	Europe
Technological Domain/Sector:	Earth Observation

The European Association of Remote Sensing Companies (EARSC) is a membership-based, not for profit organisation which coordinates and promotes the activities of European companies engaged in delivering Earth observation-derived geo-information services. EARSC represents this sector in its broadest sense, creating a network between industry, decision-makers and users and covering the full EO value chain from data acquisition through processing, fusion, analysis to final geo-information products and services. EARSC has over 125 members while the majority of its members are SME's.

The core activities of EARSC are:

Representing the members: EARSC undertakes several projects which have the goal to support its members. Besides, members are kept informed through a monthly report and through a portal which carries important news and information. Full members are also offered to participate in working groups.

Market Development and Internationalisation: Through the FIRE project EARSC is engaging with relevant market leaders across Europe to understand their needs and help the EO sector develop. Through the e-shapeproject, EARSC is engaging with end-users across the world to promote and support the EuroGEO e-shape Pilot services. Besides, as a Participating Organisation in GEO, and part of the EuroGEO Coordination Group, EARSC is actively engaged in stimulating the uptake of EO services globally.

Showing the Value of Earth Observation: EARSC leads the Sentinel Benefits Study (SeBS) project in which the organisation measures the total societal impact of products and services coming from Sentinel satellite data. EARSC also conducts a regular Industry Survey regarding the total employment and turnover of the Earth Observation sector in Europe.

Moreover, EARSC employs the following tools for promoting the industry:

1. **EOWiki:** A comprehensive Taxonomy, allowing all interested parties to access a shared vocabulary, and a description of applications.
2. **EOpages:** A search tool for users to find European companies and services across the entire EO sector.
3. **EOmall:** Allows users to find digital services matching their needs that can be bought and used immediately.

Link: <https://earsc.org/>

1.3 PEGASUS EUROPE

Name:	PEGASUS
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

PEGASUS is a partnership organisation of European aerospace universities with 28 members in total, which are coming from eleven different European countries. Today, more than 2000 aeronautical engineers graduate from the member institutions of PEGASUS each year.

The objective of PEGASUS is to offer highly relevant education and research programmes and thereby attracting the best students and scientists. Co-ordinated change, exchange of staff and students and innovation will be required to achieve these objectives.

The PEGASUS-Industry Alliance is aiming at contribution regarding the European reinforcement of academic and industrial relations for mutual benefits. This includes direct contact with aeronautical universities to enhance the cooperation in curriculum development and research. Members will

- get a current invitation to the Councils, which they may attend without voting right
- be invited to participate in the PEGASUS-AIAA Students Conference and to all other events organized by PEGASUS.

The following universities are members of the PEGASUS network:

TU Berlin	Universität Stuttgart
Ecole-air Salon de Provence	KTH Stockholm
ENSMA Poitiers	ISAE-SUPAERO Toulouse
ENAC Toulouse	ESTACA
RWTH Aachen	ETSIAE Madrid
TU Braunschweig	ETSI Sevilla
TU Dresden	ETSID Valencia
Cranfield University	IST Lisboa
University of Bristol	University of Glasgow
Politecnico di Milano	Università di Bologna
Politecnico di Torino	Università di Napoli
Università di Pisa	University of Zilina
Università di Roma	Politechnika Warszawska
CTU Prague	TU Delft

Link: <https://www.pegasus-europe.org/>

1.4 ASSOCIATION OF EUROPEAN SPACE RESEARCH ESTABLISHMENTS

Name:	Association of European Space Research Establishments
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

The Association of European Space Research Establishments (ESRE) is a non-profit association aiming to enhance European cooperation in space research while creating added value to the international space sector.

In March 2016, ESRE was formally established as an International Non-Profit Organisation, founded by five European Member States. The member states of the Association of European Space Research Establishments consist of space research centres in Poland (CBK), Italy (CIRA), Germany (DLR), Romania (INCAS), Spain (INTA), Netherlands (NLR), France (ONERA) and the Czech Republic (VZLU). These research centres will strengthen their cooperation through ESRE and propose common Research and Development (R&D) actions to advance science and technology both to support the competitiveness of the European space sector and address grand societal challenges.

ESRE research areas cover:

- Collaborative Small Satellite Constellations
- Future Launching Systems
- Cost-efficient Satellite Subsystem Technologies
- Satellite-based Greenhouse Gases Monitoring
- Environment Monitoring at Local Scale

The core activities of ESRE are:

- Intensifying the cooperation between its Members, aimed at further coordination and integration of their space-related research activities.
- Improving and intensifying the cooperation of the Association and its Members with third parties in the space domain; in particular in Europe and with European industry.
- Contributing to the global competitiveness of the European space sector.
- Positioning ESRE and its REs as one voice offering harmonized views to European industry, governments and institutions in the field of space and innovative research.

Link: <https://www.esre-space.org/>

1.5 EURISY

Name:	Eurisy
Territorial Area:	Europe
Technological Domain/Sector:	Satellite applications

Eurisy is a facilitator for space related networks to connect space and society. Therefore, Eurisy wants to raise awareness of emerging satellite applications to help professional communities in many sectors of application. These applications can be transport to risk management, from habitat protection to energy, from climate change to the Internet of Things and many more.

Eurisy identifies early adopters of satellite applications and organises workshops, conferences and case studies to foster experiences. Working closely with end-users, Eurisy is observing, understanding and documenting the obstacles and opportunities in the diffusion of innovation related to investments in space. Eurisy keeps strong relations with local and regional authorities, SMEs, public institutions and larger companies from across Europe to act as a catalyst for the diffusion of geospatial services.

Eurisy complements existing outreach activities of its members and partners, by:

- reaching professional end-users from outside the satellite applications value-added chain
- raising awareness on operational, downstream geospatial services that are already used operationally by early adopters
- working on the demand-side rather than the production-side downstream services

Eligible actions: raising awareness of emerging satellite applications which can help professional communities in many sectors of application e.g.: transport to risk management, from habitat protection to energy, from climate change to the Internet of Things.

Links: <https://www.eurisy.org/>

1.6 ENTERPRISE EUROPE NETWORK

Name:	Enterprise Europe Network
Territorial Area:	Europe
Technological Domain/Sector:	n/a

The Enterprise Europe Network (EEN), is funded under the EU programme for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME) and comprises close to 600 partners in more than 50 countries.

The EEN aims at helping SMEs to make the most out of the business opportunities in the European Union and beyond. This is realised by providing support to SMEs in technology transfer (focused on innovation), internationalisation, access to finance, advice on EU law and standards, help with IPR issues and guidance on research funding.

Member organisations are:

- technology poles,
- innovation support organisations,
- universities and research institutes,
- regional development organisations,
- chambers of commerce and industry,

The Aerospace, Space and Dual-Use Technologies Sector Group (ASDUT SG), established in 2008, is composed by EEN members with a particular interest in the aeronautics and space sectors and located in regions where those sectors are strongly represented at the industry, SME and research level. The main goal of the ASDUT SG is to help their client companies find suitable business partners as well as to increase their capabilities. To achieve this objective, members carry out a broad range of activities, including transnational brokerage events, company missions, info-days and, whenever possible, collaboration with other stakeholders and initiatives.

Duration: The Enterprise Europe Network is active since 2008.

Eligible actions: Transnational brokerage events; Company missions; Info-days; Collaboration with other stakeholders and initiatives.

Links: <https://een.ec.europa.eu/>

1.7 NEREUS

Name:	NEREUS
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

As a Network of European regions using space technologies, NEREUS offers since 2007 a dynamic platform to all regions aiming at making better use of space applications for the delivery of efficient public policies benefiting citizens. As Europe's flagship space programmes, Copernicus and EGNOS/Galileo, have entered the stage of operability, they provide data and signals which can be transformed into useful information for regions across Europe. Space technologies can be used to address a broad range of territorial management issues, such as to agriculture, traffic and transportation, water and air quality, cultural heritage, e-health. Because regions are both key users and procurers of products and services based on space technologies, enhancing the regional dimension of European space policy becomes fundamental to bring the added value of space to citizens. NEREUS serves as an advocate for regional concerns, voicing the regional dimension of European space policies and programmes at a political level. Striving to be a key source of information on space matters for its members, NEREUS aims at increasing the awareness and understanding of space solutions for all public users.

NEREUS

- improves the awareness and understanding of space technologies in member regions; fully exploits the potential of space applications in support of public policies for better-informed decision-making; bridges EU space policies and programs to regional strategies, to better anchor space uses to the needs of territories and citizens; strengthens and develop local space communities; raises the profile and visibility of space-related activities and capabilities; integrates the space dimension in regional innovation and SME programs and policies.
- Supports local politicians, entrepreneurs, researchers, and students in grasping relevant opportunities at European level; builds strong European partnerships and mobilize solid initiatives in a broad range of sectors; enhances cross-sectorial exchanges amongst operators from different economic sectors, such as agriculture, digital, tourism, maritime, etc.
- Advocates the key role of regions in developing the space market, by recognizing them as drivers of the demand for space-based services and products; relays the regional dimension of European space policies and programs towards the European institutions; provides members with timely information of the latest developments of European space policies and programs related to regional space uses in relevant application domains.

Link: <http://www.nereus-regions.eu>

1.8 EBN INNOVATION NETWORK

Name:	EBN Innovation Network
Territorial Area:	Europe
Technological Domain/Sector:	n/a

EBN is a network of around 150 quality-certified EU BICs (business and innovation centres, incubators, accelerators and other support organisations) and approximately 100 associate members that support the development and growth of innovative entrepreneurs, start-ups and SMEs. EBN is a community of professionals whose day-to-day work guides these businesses to grow in the most effective, and efficient way, delivering sustainable impact.

Besides the networking service, EBN's service portfolio consists of:

- **EU/BIC Services**, a unique “certification & benchmarking system” for technology-based incubators & accelerators
- **International Hub**, a vibrant international networking platform for intermediaries and an international soft-landing business platform for Start-ups, SMEs and Entrepreneurs
- **Project Labs**, an exceptionally efficient “EU-funded projects” collaborative factory
- **EU Gateway**, an unquestioned reputation within European Government circles (EC, EP, EIB, ESA), National/Regional Public Authorities, and non-EU agencies
- **Events and Exchange Forum**, planning and running
- **Open Innovation**, in collaboration with member or others

Countries involved: Austria; Belgium; Brazil; Bulgaria; Canada; Chile; China; Colombia; Cyprus; Czech Republic; Egypt; Finland; France; Germany; Greece; Hungary; India; Ireland; Italy; Lebanon; Luxembourg; Macedonia; Morocco; Netherlands; Poland; Portugal; Russian Federation; Serbia; Slovakia; Slovenia; South Africa; Spain; Sweden; Switzerland; Taiwan; Turkey; United Kingdom; United States.

Activities: Cross-border and international connections and B2B/Partnership opportunities; high-level events, conferences and workshops; EU-funded projects collaborative factory; sharing of best practice, success stories and knowledge through downloadable content and events; special interest groups (Special Interest Group on Space under construction).

Link: <https://ebn.eu/>

1.9 FORUM AEROSPACE BADEN-WUERTTEMBERG E.V.

Name:	Forum Aerospace Baden-Wuerttemberg e.V.
Territorial Area:	Baden-Wuerttemberg, Germany
Technological Domain/Sector:	Aerospace Technology

As a stakeholder and the voice of the aerospace industry in south-western Germany, the Forum Aerospace Baden-Wuerttemberg (LR BW) has all the highlights on its radar. It is the nodal point between industry, science, politics and society. With networking activity, this Forum increases the global competing power of local companies – with special focus on the medium-size supplier industry.

Apart from personal communication and regular newsletters about current trends and topics, events and working groups allow an exchange regarding new technological issues and upcoming needs within the supply chain. Joint exhibition appearances, business travels and projects enhance market chances and facilitate the opening of new markets for member organizations.

Focus of the activities of the working groups is the exchange of information between the members, joint processing of sector-specific questions and the representation of interests against the ministries on different levels.

Link: <https://www.lrbw.de/en/about-us/activities/>

1.10 ASD EUROSPACE

Name:	ASD Eurospace
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

ASD represents the Aeronautics, Space, Defence and Security Industries in Europe with the objective of promoting as well as supporting the competitive development of the sector and fosters the development of space activities in Europe.

For the benefit of European industries and in the collective interest of its members, ASD seeks to:

- act as a single voice to promote the best interests of the Industry in dialogue with the EU Institutions and other stakeholders;
- contribute to shaping effective policy and legislation at European and global level by advocating common positions;
- promote international cooperation and dialogue with other international associations and organisations;
- raise awareness about the benefits of our sectors to a large variety of audiences: politicians, decision-makers, businesses, the media, general public, NGOs and other stakeholders;
- Act as the central intelligence hub for expert knowledge on industry-related issues.

Therefore, Eurospace promotes a better understanding of space industry-related issues and problems. It gathers industry-relevant information and maintains permanent liaison with ESA (the European Space Agency), National Space Agencies (CNES/France, DLR/Germany, ASI/Italy) and in general any organisation using or compelling the use of space techniques such as the European governments or the European Union.

Link ASD: <https://www.asd-europe.org>

Link Eurospace: <https://eurospace.org/>

2 EUROPEAN ACCELERATION AND INCUBATOR PROGRAMS FOR SPACE

Within the last several years, the terms “accelerator” and “incubator” are spreading around the industry, especially in the start-up ecosystem. Boosting start-ups with the personal development of the entrepreneurs through coaching sessions, 1 on 1 or in classes are one key element of this kind of programs. But what is the difference between accelerator and incubator programs?

First of all, the target is nearly the same, the further development of an early-stage start-up. The incubator is getting active in an earlier stage of the start-ups lifetime, at the very beginning, mostly directly in the seeding stage. The provision of first infrastructure and financial resources are often crucial to get things started. Incubators are a good opportunity for start-ups to start or further develop their businesses.

Accelerator programs are mostly in between prototyping and market entry. Co-working spaces are one key benefit of these programs, both, for incubator and accelerator. An open space with diverse people, coming from different background, different industries and with different approaches are creating an ecosystem of founders and entrepreneurs to enrich the all-over creativity and spreading the start-up atmosphere.

As coaching and financial resources are already mentioned above, another key benefit of these programs, incubator and accelerator programs, is the networking opportunity. As these programs have a particular interest of you getting funded, they provide and push your idea and start-up through their networks to connect you to potential partners and investors.

As well, often, training is followed by pitching events in front of a real audience to gain real customer feedback based on customer insights, experiences and real judgements to improve your product and businesses.

This chapter will show 11 opportunities in Europe to get incubated or accelerated within the space industry, beginning with the business incubation centre of ESA – the European Space Agency which offers 20 centres across Europe for 180 start-ups annually in total.

2.1 BUSINESS INCUBATION CENTRES BY THE ESA

Name:	European Space Agency (ESA)
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

The European Space Agency (ESA) has set up business incubation centres in several Member States to strengthen the EU's competitiveness within the space industry. The purpose of the ESA business incubation centres is to enable start-ups in receiving technical and entrepreneurial assistance in order to set up their businesses using space technology for general non-space industrial, scientific and commercial uses ("spin-off") or using non-space technology for proposing products and services for the space sector ("spin-in").

Link: [ESA Business Incubation Centres](#)

The following picture, figure 1, displays the positions of the Business Incubation Centres.

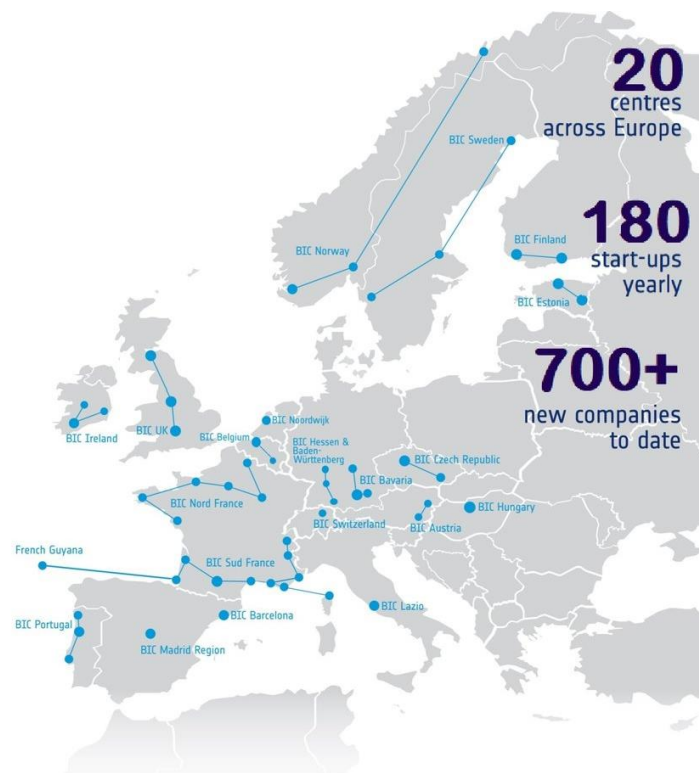


Figure 1 - ESA Business Incubation Centres

Below are descriptions of two representatives of the European Space Agency's Business Incubation Centres which are the ESA BIC Lazio and ESA BIC Bavaria. They are chosen because they are most closely linked to SpaceUp partners.

¹Source: https://www.esa.int/Applications/Telecommunications_Integrated_Applications/Business_Incubation/ESA_Business_Incubation_Centres12

ESA BIC Lazio managed by Lazio Innova

Name:	ESA BIC Lazio
Territorial Area:	Lazio, Italy
Technological Domain/Sector:	n/a

The initiative is co-founded and supported at local level by the Government of Regione Lazio and by the Italian Space Agency (ASI) in the frame of its own activity to foster technology transfer in Italy. ESA BIC Lazio is part of ESA's Technology Transfer Programme Office and it is managed by Lazio Innova. Entrepreneurs and start-up companies at ESA BIC Lazio can be hosted in one of Lazio Innova's regional incubators, at Tiburtino Technology Park in Rome.

The objective of the ESA BIC Lazio is to help entrepreneurs or researchers with innovative ideas that intend to apply technologies, know-how and spatial derivation data in non-space sectors. One of the fundamental elements of the program is to bridge the gap between an idea and its application in a business, with a system of integrated services for the creation and development of business, also through technology transfer projects.

Therefore, Lazio Innova offers through the Spazio Attivo Roma Tecnopolo, participation in the ESA BIC Lazio initiative, which is providing know-how in the field of entrepreneurial promotion and offering an articulated system of services able to support the birth and development of innovative start-ups within the space industry. To be involved in the project. It is necessary to participate in a specific call.

The resources allocated in the call total 500 thousand euros (co-financing of the Lazio Region and the Italian Space Agency). Each selected project will have a maximum of 50 thousand euros, for the costs related to the prototyping phase, development of the new product / service and protection of intellectual property. The winners will be incubated for a maximum of two years in Rome, at the Spazio Attivo Roma Tecnopolo of Lazio Innova, and will benefit from entrepreneurial and technical tutoring, as well as support to access other financing instruments.

Applications must be submitted by e-mail to: Esabic@lazioinnova.it.

Duration: 24 months

Eligible countries: Austria, Belgium, Czech Republic, Finland, France, Germany, Greece, Ireland, Italy, Hungary, Netherlands, Norway, Switzerland, Portugal, Estonia, Sweden and the United Kingdom.

Eligible actions: Product Development; IPR (Intellectual Property Rights).

Eligible applicants: Aspiring entrepreneurs and start-ups; space companies; research centres and universities.

Budget: € 500,000 - 50% co-financing ESA / ASI (General Support Technology Programme) and Lazio Region (Law R. 13/2013, art.6). € 50,000 per company.

Link: <http://www.lazioinnova.it/esa-bic-lazio-innova/>

ESA BIC Bavaria

Name:	ESA BIC Bavaria
Territorial Area:	Bavaria, Germany
Technological Domain/Sector:	Aerospace Technology

The ESA Business Incubation Centre in Bavaria, Germany, was founded in 2009 and is managed by the Anwendungszentrum GmbH Oberpfaffenhofen (AZO). Together with its partners, the centre offers business start-up support as well as technical expertise in many space-related areas, among others in satellite navigation, data systems, robotics and software systems. ESA BIC Bavaria has business incubation offices at four locations in the region: the headquarters in Oberpfaffenhofen, and branch offices in Nürnberg, Berchtesgadener Land and Ottobrunn. A new branch for Northern Germany was opened in Bremen in 2019.

In addition to financial assistance, ESA BIC Bavaria provides technical support and expertise through renowned partners at each branch: the German Aerospace Center in Oberpfaffenhofen and the Fraunhofer Institute for Integrated Circuits (Fraunhofer IIS) in Nürnberg, entities of Germany's two largest research institutions; the Economic Development Corporation Berchtesgadener Land (WFG BGL); Airbus Defence and Space at the Ludwig Bölkow Campus in Ottobrunn.

The scientific expertise and development network of ESA BIC Bavaria's partners are complementing local start-ups' technical development and promote both the commercialisation and the usage of aerospace technologies in other growth areas.

The general conditions are the same for all ESA-BICs.

Eligible actions: financial support (€ 50,000 cash; € 50,000 optional loan); technical support (hands-on support from leading tech experts in various domains); network support (meet with business contacts and become part of a unique network).

Eligible applicants: Aspiring entrepreneurs and start-ups; space companies; research centres and universities.

Link: <https://www.esa-bic.de/>

2.2 NEWSpaceVISION INCUBATOR

Name:	NewSpaceVision
Territorial Area:	Germany
Technological Domain/Sector:	Aerospace Technology

NewSpaceVision (NSV) is a German space organisation based and founded in Germany's capital, Berlin. NSV wants to grow the European (New) Space start-up scene and build awareness for the interesting applications of space-related hardware and software. Therefore NSV is acting as the starting point for aspiring entrepreneurs and skilful engineers from all kinds of fields to find contact points to existing companies or find colleagues, inspirations and resources to start their own venture. Providing information, podcasts and networking opportunities with the technical university from Berlin, NSV is one of the first new space incubators in Germany.

During the 6-month program, NSV is supporting with funding, access to a makerspace, expert mentoring and helpful workshops. The purpose of the incubator program is to develop technology and business models. While working on prototypes, participants will also gain an understanding of customer requirements and market characteristics in this industry.

The incubator program started in April 2020 in Berlin, Germany. The offered support covers:

- Funding,
- Coaching, coaching with technical and business experts,
- Networking, with key-players and experts within the space sector and
- Makerspace, an office and shop floor.

Eligible actions: Space Start-ups

Eligible applicants: Early Stage Start-ups

Budget: Funding of 20.000 €

Link: <https://newspacevision.com/#incubator>

2.3 INCUBATION PROGRAM OF THE SCOTTISH CENTRE OF EXCELLENCE

Name:	Scottish Centre of Excellence in Satellite Applications
Territorial Area:	Scotland
Technological Domain/Sector:	Aerospace Technology

The Scottish Centre of Excellence in Satellite Applications (SoXSA) aims to bridge space down to the Earth and has an end-to-end focus on the use of satellite derived data and services to challenge conventional ideas and develop new concepts in the exploitation of space for the betterment of life on Earth.

The incubator, supported by the UK Space Agency and Scottish Enterprise, will support four companies for an incubation period of one year. Throughout the incubation period, companies will benefit from unparalleled business support and access to a wide business network through SoXSA, as well as a support package worth in excess of £15,000, including:

- Desk space @ Tontine
- Accelerator programme
- Attendance at Industry event of choice
- Company Innovation voucher

The programme is open to start-ups, as well as for existing companies, that can demonstrate high-growth potential. To apply for the programme, the use of space technology is to demonstrate within the business model.

Eligible actions: Space Technology

Eligible applicants: Start-up or existing companies that can demonstrate high-growth potential

Budget: Support package worth £15,000.

Link: <https://sa.catapult.org.uk/scottish/>

2.4 COPERNICUS INCUBATION PROGRAMME

Name:	Copernicus Incubation Programme
Territorial Area:	Europe
Technological Domain/Sector:	Earth Observation Data

The Copernicus Incubation Programme launched by the European Commission supports European entrepreneurs and start-ups working with EO data to create innovative, commercially viable products and services.

This initiative invests in the start-up phase and international growth of Copernicus-based businesses in Europe. The goal is to support European innovative, commercially promising businesses that make use of Copernicus data and services. It will boost the use of this data and services, which prove valuable globally in many domains: industry 4.0, mobile and digital services, environment protection, urban management, regional and local planning, agriculture, forestry, fishery, health, transport, climate change, sustainable development, civil protection, tourism among others.

Duration: 2018-2020

Eligible countries: Austria, Belgium, Czech Republic, Finland, France, Denmark, Germany, Greece, Ireland, Italy, Hungary, Netherlands, Norway, Switzerland, Portugal, Estonia, Sweden and the United Kingdom.

Eligible actions: Prototyping and research expenses; company setup, insurance, license and permit fees; equipment and supplies, particularly IT equipment (hardware or software), and other technological expenses; office space; expenses related to intellectual property rights; advertising, promotion, communication and visits to clients; website and e-mail domain, analytics services; accounting, consulting or legal expertise; borrowing costs; employee-related costs, including recruiting expenses.

Eligible applicants: Teams of entrepreneurs (at least 2 complementary profiles); legally established start-ups; University and research institute spin-outs; corporate spin-outs; venturing teams within corporate venture programs with an intention to spin out.

Budget: Start-ups receive up to € 50,000 and up to 85% of the total costs described in their application to the programme. Co-funding is required for at least 15% of the total costs.

Links: <https://copernicus-incubation.eu/>

2.5 COPERNICUS ACCELERATOR

Name:	Copernicus Accelerator
Territorial Area:	Europe
Technological Domain/Sector:	Earth Observation Data

Earth observation and big data from the Copernicus programme offer unique insights into life on Earth, its environment and people. The Copernicus Accelerator offers a customised business development scheme for 50 visionary start-ups and entrepreneurs. These 50 candidates will develop innovative ideas tackling societal challenges by using Earth observation data, especially from Copernicus. The programme supports the Accelerator candidates to move beyond idea conception into real commercial ventures. Each year, selected participants are matched with high-level professionals and benefit from individual mentoring alongside further training opportunities such as boot-camps and webinars and dedicated marketing support.

Duration: Annually. Applications can usually be submitted from June to September.

Eligible countries: EU Countries, Norway and Iceland.

Eligible actions: Coaching, Boot-camp, Virtual Training, Access to the EO network, networking with Investors, Market Validation, Marketing

Eligible applicants: Start-ups, SMEs, companies.

Link: <https://accelerator.copernicus.eu/programme/>

2.6 STARBUST ACCELERATOR

Name:	Starburst Accelerator
Territorial Area:	International
Technological Domain/Sector:	Aerospace Technology

The Starburst Accelerator is a 12-month acceleration program. It has seven work streams to prepare a start-up for Series A fundraising maturity. As well, Starburst is proposing exclusively for start-ups closed offices and open-space desks in a building dedicated to Aerospace and Defence Innovation in Paris. According to the Starburst homepage, the following offerings are included in the program.

1. Acceleration Support
Dedicated Starburst resources and account management ensuring your company benefits fully from the program & the greater ecosystem
2. Senior Coaching
The Starburst team of experts is available to coach your business and provide the necessary expertise when needed, based on your maturity
3. Mentoring
You are granted access to a worldwide pool of experienced mentors according to your company's needs
4. Corporate Intros
Connect with the entire aerospace value chain worldwide and build commercial traction
5. Public Relations
Starburst works with leading industry agencies to bring media attention to the most promising aerospace start-ups
6. International Mobility
You gain access to our network of offices in Paris, Los Angeles, Montreal and Singapore & meeting rooms when you travel abroad
7. Networking Events
Access a range of global events planned for showcasing & networking to expand your reach and build essential contacts

Eligible actions: Space and aviation related products and technologies

Eligible applicants: Start-ups that have raised their seed round, having a first prototype or product and beginning to track record with industry

Link: <http://starburst.aero/accelerator-program/>

2.7 SPACE CAMP BY SERAPHIM

Name:	Space Camp
Territorial Area:	International
Technological Domain/Sector:	Aerospace Technology

The Space Camp is a nine week programme with on-site and remote workshops, 1-on-1s, keynotes and fireside chats. Companies will be able to interact with the entire Space Camp ecosystem throughout. Space Camp will work closely with the teams to provide business and commercial advice, individual coaching and mentoring opportunities, co-working space, access to the alumni network and on-site visits to our major partners.

The Space Camp runs the Product Day, which is an opportunity to highlight your product and explore the potential to run 'Proof of Concept' projects with our corporate partners and the Investor Day, which gives the chance to pitch to over 100 investors and key leaders in the Space Industry, presenting your progress from the programme.

After Space Camp, an integration into the SpaceTech network with leading corporates and other global alumni will follow. The Space Camp programme is designed to enable the start-ups to become investment-ready and to build relationships with major potential corporate clients. This is how Space Camp is planning to do this:

1. Exceptional Speakers
2. Engagement with Decision Makers (e.g. industry leader)
3. Space-tech VS Perspective
4. Expert Guidance
5. The Space Community Network

Eligible actions: Space and aviation related products and technologies

Eligible applicants: Start-ups that have raised their seed round, having a first prototype or product and beginning to track record with industry

Budget: Depends on the Investor

Link: <https://www.spacecamp.vc/>

2.8 IMEC.ISTART PROGRAM

Name:	imec.istart
Territorial Area:	Flemish or Brussels region, Belgium
Technological Domain/Sector:	Logistics, Mobility & Smart Cities; eHealth; Media, Telecom & Entertainment; Space Technology; Fintech; Education & Learning

The imec.istart business acceleration program focuses on early stage tech start-ups in Belgium. For one year, the acceleration program aims to

- proof the feasibility of a business concept,
- launch of the first product and
- establish the start-ups' structure.

The program offers a combination of pre-seed funding, coaching as well as mentoring, workshops and guidance by experts, and other support like workspace, software deals, advice in marketing and access to investors. Imec has several partners within the industry experts to offer six vertical tracks on: Logistics, Mobility & Smart Cities; eHealth; Media, Telecom & Entertainment; Space Technology; Fintech; Education & Learning.

Duration: imec.istart has three open calls throughout the year: January, May and September. The duration of the support is a minimum of 12 months. After graduating from imec.istart, imec continues to support its start-ups as long as it is shareholder.

Eligible countries: The program focuses on entrepreneurs in the tech sector who want to valorise their idea in an (inter)national context, with a strong Flemish presence (headquarters in the Flemish or Brussels Region). Foreign start-ups can be accepted for the program, as long as they can demonstrate to have a link with the Flemish or Brussels region (e.g. collaboration with a local research institute, development team in the region, sales office), or commit themselves to build such link.

Eligible actions: Access to Coaching, Finance, Technology, Community, Talent, Market

Eligible applicants: Flanders or Brussels based entrepreneurs and start-ups, or foreign start-ups demonstrating a link with Flanders or Brussels.

Links: <https://www.imec-int.com/en/istart/entrepreneur>

2.9 SPACE³AC

Name:	space ³ ac
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

The space³ac is an equity-free acceleration program which aims to connect start-ups and corporations. Their traditional focus is downstream space technologies. Space³ac is looking for new and existing start-ups, academia or scientific teams, alumni of European Satellite Navigation or Copernicus Masters competitions and other teams that would like to change the world using EO, GNSS, telecommunications and/or integrated application.

The program's headquarter is in Gdansk, Poland. It is not necessary to move to Gdansk for the participation in the program, but it is required to be present at the meet every few weeks. The events, meeting and workshops will be at Gdansk, which are mandatory to graduate from the acceleration phase. At least one person has to be present; there is no need to bring all teammates.

The offered support of space³ac includes:

- Technical and business mentorship with experts and entrepreneurs
- Fast track for building a MVP with following marked tests
- Access to infrastructure and network consists of companies, investors, academies and more
- Working space in a co-working office
- A caretaker for the whole acceleration program
- Up to 200.000 PLN in cash for R&D activities – equity-free

The partner of this accelerator program uploaded several challenges. If an applicant identified a solution to solve these specific challenges (<https://www.space3.ac/challenges/>), the likelihood to get into the accelerator program will increase.

Eligible actions: Space Industry

Eligible applicants: Start-up teams with a focus in space

Budget: Up to 200.000 PLN without equity

Link: <https://www.space3.ac/>

2.10 AIRBUS BizLAB

Name:	Airbus BizLab
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

Airbus BizLab is an aerospace business accelerator, connecting start-ups and Airbus intrapreneurs to speed up the transformation of new ideas into businesses with value. The acceleration programme will take 6-months. Participants of the Airbus BizLab have access to coaches and experts from domains like technology, legal, finance, and marketing, which will provide guidance and insights to the teams, co-working space and executive mentors, to co-design the acceleration programme and prototyping as well as test facilitation.

After the acceleration process, the participants will have the opportunity to pitch at the Demo Day with Airbus decision-makers, partners, customers, and venture capitalists. BizLab offers an equity-free cash funding option of up to 45,000€ to implement the Proof of Concept. The payment is subject to successful delivery of a prototype in accordance with a specified use case defined with an Airbus function.

The 6-month acceleration programme is segmented into three gates where start-ups build the MVP, test it and based on customer feedback pivot or continue. At the end of each gate, concrete deliverables are expected. The acceleration program is based on the lean start-up methodology and articulated around three pillars:

- Customer desirability
- Solution feasibility
- Business viability

Eligible actions: Aeronautical industry

Eligible applicants: Start-ups without the aeronautical industry – bonus: challenging start-ups for innovative concepts and technical solutions to the sustainable development goals (UN SDGs).

Budget: 45,000€ without equity for proof of concept

Link: <https://www.airbus-bizlab.com/about>

2.11 ASTROPRENEURS

Name:	Astropreneurs
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

The project aims at supporting entrepreneurs, start-ups and SMEs, coming from the space sector to create viable business cases and have faster market approach by mentoring them on businesses and technical needs, helping them to access private and public funding, but also to overcome the financial, administrative and networking barriers.

One focus is on mentoring, accelerate access to finance and funding opportunities to develop viable business cases and to speed up that young entrepreneurs are entering commercial phases.

150 start-ups and 500 entrepreneurs will be supported, with 50 h (average) of mentoring provided for each over in three months, remotely. Eight webinars are planned on space technologies, space data application or space-related businesses and eight workshops with different public financial instruments are planned, some in classrooms and some as webinars. Also, one-to-one sessions are planned for non-space based incubator and business centres, to be trained on space-related support. A total maximum of 500 persons/start-ups will be selected for the mentoring.

Duration: The project started in January 2018 and will finish in December 2020.

Countries involved: The consortium of Astropreneurs is made up of seven partners: Instituto Pedro Nunes in Portugal, Verhaert in Belgium, Brimatech Services in Austria, The Science and Technology Facilities Council in Great Britain, Aerospace Valley in France, the Centre for Satellite Navigation Hessen in Germany, and CzechInvest in the Czech Republic.

The partners all either manage an ESA BIC or belong to ESA Brokers' Network.

Activities: Up to 50 hours of mentoring is available for each successful applicant, over a three-month period.

Eligible applicants: entrepreneurs, spin-outs, start-ups, SMEs, university students with excellent space-related ideas, from all European countries.

Link: <https://astropreneurs.eu/>

3 AWARDS AND PROGRAMMES FOR SPACE

The Ecosystem of the European Space Industry provides various opportunities in kind of programmes for Space related start-ups and SME's in Europe.

Several programmes are established by the European Commission and national governmental organisations to support the European space ecosystem to 2020. The most famous of its kind is the European Innovation and Research framework program called Horizon 2020. As Europe has been active in the space sector for several decades and its activities encompass a wide spectrum, ranging from rocket launchers and space exploration to space-based applications that provide new services to society, Horizon 2020 is focusing as well on space industry with its Horizon2020 – Space.

Other programmes are inviting entrepreneurs, start-ups and companies to collaborate, solve challenges, act together in research matters or simply write a master thesis about a scientific challenge related to space.

These programmes are a very good opportunity to get connected to other stakeholders, either they are in research and development, academically institutes, large corporations and associations which are leading the industry, passionate entrepreneurs, representatives of governmental space organisations or simply excited customers.

This chapter will introduce you to Horizon 2020, providing two examples of programmes and other interesting opportunities.

3.1 HORIZON 2020

Name:	Horizon 2020
Territorial Area:	Europe
Technological Domain/Sector:	n/a

Horizon 2020 is the biggest European Research and Innovation programme with nearly 80 billion euro of funding available from 2014 to 2020. Horizon 2020 aims to foster the global competitiveness of the European economy and its companies. Therefore, Horizon 2020 will support innovation and research activities within Europe with its working programmes by combining excellent science research, industrial leadership and tackling societal challenges. The goal is to ensure Europe produces world-class science, removes barriers to innovation and makes it easier for the public and private sectors to work together in delivering innovation.

Horizon 2020 has a specific Work Programme on Space, included in the “Leadership in Enabling and Industrial Technologies” pillar. However, the following two other instruments are particularly interesting for the present overview: EIC Accelerator and Fast Track to Innovation (FTI), described below.

Horizon 2020 - Space

EU space policy and research have been supported through framework programmes. This support is critical to the ongoing development of the space sector, in particular:

- It helps to sustain a competitive space industry (including manufacturers, service providers and operators) and research community;
- It provides support to develop appropriate technologies and services, necessary for the development and exploitation of new systems;
- It encourages the research community, as well as the private sector, to intensify their efforts and investments in the space sector.

Link to the H2020 Space: <https://ec.europa.eu>

Link to the Program: <https://ec.europa.eu/programmes/horizon2020/en>

Link to the EU Space Policy: <https://ec.europa.eu/growth/sectors/space/>

Report: [Strategy for Space](#)

Two examples of the H2020 program's initiatives are the chapters:

3.2 Horizon 2020 - EIC Accelerator

3.3 Horizon 2020 - Fast Track to Innovation (FTI)

3.2 HORIZON 2020 - EIC ACCELERATOR

Name:	EIC Accelerator
Territorial Area:	Europe
Technological Domain/Sector:	n/a

The EIC Accelerator (previously SME Instrument) is part of the European Innovation Council (EIC) pilot that supports top-class innovators, entrepreneurs, small companies and scientists with funding opportunities and acceleration services. The EIC Accelerator supports high-risk, high-potential small and medium-sized enterprises and innovators to help them develop and bring onto the market new innovative products, services and business models that could drive economic growth.

Selected companies receive funding and optional equity and are offered business coaching and mentoring to scale up their innovation idea. They get extra acceleration services to connect with investors, corporates and likeminded entrepreneurs. Activities could, for example, include trials, prototyping, validation, demonstration and testing in real-world conditions, and market replication. If the activity concerns a primarily technological innovation, a Technology Readiness Level (TRL) of 6-8 is envisaged for projects requesting grants only. Projects will receive between € 0.5 and € 2.5 million in the form of grants.

The EIC Accelerator offers blended finance in the form of an optional investment in equity in addition to the grant, to single for-profit SMEs. Grants will finance activities from TRL 6-8. The maximum of investment in the form of equity is € 15 million. Running projects can under certain circumstances request additional blended finance potentially combined with a top-up of their grant.

Duration: The EIC Accelerator has a continuously open call with four cut-offs per year. Projects should normally take 12 to 24 months to complete, but could be longer in exceptional and well-justified cases.

Eligible countries: EU Member States and Horizon 2020 associated countries.

Eligible actions: This EIC pilot measure offers free coaching, business acceleration services and mentoring to help businesses scale up and grow. These are open to all small businesses that are EIC clients, simultaneously to their grant.

Eligible applicants: SMEs, including young companies and start-ups, from any sector.

Budget: Projects will receive between € 0.5 and € 2.5 million in the form of grants. The maximum of investment in the form of equity is € 15 million. In total, the EIC Accelerator had a budget of more than €1.3 billion for 2019-2020.

Links: <https://ec.europa.eu/easme/en/eic-accelerator>

3.3 HORIZON 2020 - FAST TRACK TO INNOVATION (FTI)

Name:	Fast Track to Innovation
Territorial Area:	Europe
Technological Domain/Sector:	n/a

Fast Track to Innovation (FTI) is a fully-bottom-up measure in Horizon 2020 promoting close-to-the-market innovation activities that is open to all types of participants. FTI aims to reduce the time from idea to market and to increase the participation in Horizon 2020 of industry, SMEs and first-time industry applicants. FTI projects must be business-driven and clearly demonstrate a realistic potential for quick deployment and market take-up of innovations.

Duration: On offer is a maximum EU contribution of € 3M per proposal with time-to-grant (from the cut-off to the signature of the grant) of around six months.

Eligible countries: EU Member States and countries associated to Horizon 2020.

Eligible actions: All kinds of sustainable innovations addressing societal needs or innovations in the following domains: Key Enabling Technologies (KETs), ICT and Space as far as they create viable business opportunities.

Eligible applicants: Consortia comprising between three and five legal entities established in at least three different countries. Within each consortium there must either be an allocation of at least 60% of the budget to industry participants or the consortium must include a minimum of two industry participants in a consortium of three or four partners, or three industry participants in a consortium of five partners.

Budget: For 2018 to 2020, Fast Track to Innovation had a total budget of around €300 million.

Links <https://ec.europa.eu/easme/en/eic-fast-track-innovation-fti>

3.4 EUROPEAN SATELLITE NAVIGATION COMPETITION

Name:	European Satellite Navigation Competition
Territorial Area:	Europe
Technological Domain/Sector:	Satellite Navigation

The innovation competition awards every year the best services, products, and business ideas using satellite navigation in everyday life. The European satellite navigation competition (ESNC) is an international innovation competition which serves as an accelerating instrument for space-related start-ups.

The ESNC provides support for new and innovative ideas at each and every development stage, with the ultimate aim to turn them into real business cases. Different prizes are offered by the partners of the ESNC which are for example:

- The prize for the start-up of the year
- The prize for the idea of the year.

Challenges are, for example:

- GALILEO.COPERNICUS synergy challenges
- DLR Artificial intelligence navigation challenge or the
- GNSS living lab prize.

Duration: Annually

Eligible actions: There are two tracks in the competition: 1. Regional Challenge, which supports the business case from various partners regions, including 141 partners worldwide. 2. Special Prizes, which are partnered by institutional and research partners who are searching for innovative solutions tailored to their specific needs in various satellite navigation related fields.

Eligible applicants: Enterprises, start-ups, scientific institutions, and individuals of legal adult age.

Budget: The ESNC annually offers prizes worth more than 1 €M.

Link: <https://www.esnc.eu/>

3.5 COPERNICUS MASTERS

Name:	Copernicus Masters
Territorial Area:	Europe
Technological Domain/Sector:	Earth Observation

The Copernicus Masters is an international competition to promote the Copernicus concept and it is about innovative solutions, developments and ideas for business and society based on Earth observation data. Anwendungszentrum GmbH Oberpfaffenhofen (AZO) launched the Copernicus Masters in 2011 on behalf of the European Space Agency (ESA).

Interested candidates can apply for a Partner Challenge as well as a Copernicus Prize from their database. The Copernicus Masters Partner Challenges focus on a specific topic and are offered by premium partners with cash and in-kind prizes to boost innovation development. The Copernicus Prizes co-financed by the EC do not follow a specific topic. They are mainly presented by a region, country or institution that also offers cash and direct support to boost business development. Partner Challenge and Copernicus Prizes are presented annually in the database of Copernicus Masters. In 2020, the prize pool was worth EUR 620.000.

Duration: The competition is announced annually and usually follows the following schedule. Submission phase: April-June; Evaluation phase: July-September; Announcement of challenge finalists: October/November; Awards ceremony: December.

Eligible countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Eligible Actions: An international competition that awards prizes to innovative solutions, developments and ideas for business and society based on Earth observation data. Big data produced by Earth observation holds huge potential for the creation of innovative products and services.

Eligible applicants: Enterprises, start-ups, scientific institutions, and individuals of legal adult age

Link: <https://www.copernicus-masters.com/>

3.6 INNOspace MASTERS

Name:	INNOspace Masters
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

INNOspace Masters is a competition organised by AZO together with the Germany Aerospace Center (DLR) the ESA Incubation Centres, the OHB and Airbus. The competition offers challenges to SMEs, start-ups, research teams, students and universities regarding the space industry. This programme is within the scope of the INNOspace initiative for strengthening innovation and establishing new markets.

The aim of the competition is collecting different and new ideas and solutions within the space industry. The competition is divided into the following four different competition categories:

1. DLR Challenge;
2. ESA BIC Start-Up Challenge;
3. Airbus Challenge;
4. OHB Challenge.

The winner's benefits are access to the premium network and technical expertise of INNOspace. 42 prizes have been awarded since 2015, 5.4 million € were in the prize pool, 295 projects ideas have been already implemented and 34 international experts are part of the expert team.

Duration: The INNOspace Masters is announced annually. The sixth round is running from 30th October 2020 to 5th February 2021.

Eligible applicants: Enterprises, universities, non-university scientific institutions, start-up-teams, consortia, and individuals of legal adult age.

Link: <https://www.innospace-masters.de/?lang=en>

3.7 ARTES BUSINESS APPLICATIONS

Name:	ARTES Business Applications
Territorial Area:	Europe
Technological Domain/Sector:	Satellite Data

The ARTES business applications programme addresses the development of operational services for a wide range of users through the combination of different systems, based on the use of satellite data (EO, SatNav, SatCom and Human space flights technologies) and their integration with terrestrial technologies. The programme contains three types of access to funding:

1. invitation to tender issued throughout the year with a specific thematic area and budget;
2. kick-start activities funded at 75%, with ESA providing up to € 60,000 per contract;
3. direct negotiation dedicated to businesses from any sector that can apply throughout the year,

The amount of funding may vary according to the project. The Programme is operated nationally by Ambassador Platforms.

Duration: Always open

Eligible countries: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Norway, Poland, Portugal, Romania, Sweden, Switzerland and the United Kingdom.

Eligible actions: feasibility studies; demonstration projects.

Eligible applicants: Start-ups, SMEs, research centres, companies, universities. Budget: Depending on the National Space Agency contribution to the programme.

Link: <https://business.esa.int/>

3.8 GERMAN AEROSPACE SECTOR PROGRAMMES

Name:	Aerospace Programmes of German Ministry for Economic Affairs and Energy (BMWi)
Territorial Area:	Germany
Technological Domain/Sector:	Aerospace Technology

The national research and innovation programmes by the Ministry for Economic Affairs and Energy (BMWi) are of importance for Germany as a location for aviation, space and innovation. Germany's aerospace sector is a driver of technological innovation and economic growth. It brings together almost all the high technologies of this age of information: electronics, robotics, measuring, and control and materials technology. At 11%, the proportion of the sector's turnover, which is spent on research and development, is very high.

The resulting innovations have greatly benefited computer design. They have also given rise to the emergence of many other branches of industry and global environmental and climate research, none of which would have been possible without the pioneering work done by this sector. Aerospace not only links continents: it was also the first transport sector to subscribe to sustainability and define specific climate change mitigation targets at the beginning of this century (ACARE 2020). Aerospace helps us better understand Earth and space, opens up new technical applications, provides the basis for new types of services, fosters international cooperation, and facilitates disarmament and peace policy in Europe and beyond. Whilst aerospace may be a comparatively small sector of industry in Germany, it is of enormous strategic importance. This is true of all the segments of this forward-looking sector.

Unlike in the aviation sector, where the commercial market is well-developed, international space activities are largely driven by public-sector space strategies and the available budget funding. This means that the Federal Government's space policy and its contribution to European structures are of central importance for Germany's space industry. In its High-Tech Strategy 2020, the German government has awarded special importance to space flight, designating space a key enabling technology.

Budget: Besides funding DLR (see below) and a large contribution to ESA an additional budget reaching a total of 76 Mio Euro is available for space and innovation from 2018 until 2022

Eligible applicants: German enterprises, industry, scientific institutions. Separate funding opportunities for SME and start-ups also exist

Link: <https://www.foerderinfo.bund.de/de/raumfahrt-187.php>

Link: <https://www.foerderinfo.bund.de/en/funding-advisory-service-1799.php>

4 EUROPEAN CLUSTER WITHIN THE SPACE INDUSTRY

Cluster Organisations are groups of several specialised enterprises, - e.g. SMEs, institutes – and different other topic-related actors that are cooperating actively and close together in a particular location as a network.

A diverse network with key-stakeholders coming from all over Europe, having different backgrounds, different know-how and approaches to solve problems with solutions, is providing an impressive open innovation opportunity. Leaders, from scientific specialisations as representatives from state of the art research providing the necessary theory as well experienced business managers from large companies or specialised SME's, are providing real insights from the business perspective.

This open innovation approach behind cluster collaboration already proved its concept through the last years and the European Commission is actively supporting the cluster activities in Europe. The European Commission's [Cluster Portal](#) provides different tools as well as information about the European key initiatives, actions, projects and events for clusters and their members in the European Union. The Cluster Portal supports in the following matters and beyond:

- The [European Cluster Observatory](#) – providing information, mapping tools and analysis of EU clusters and cluster policy. Also informs about events and activities for clusters.
- [Cluster Excellence](#) – supporting benchmarking and training tools for cluster organisations.
- [Cluster Internationalisation](#) – enabling EU clusters to profile themselves, exchange experience and search for partners for cooperation within and beyond the EU.
- [Clusters and Emerging Industries](#) – providing background information on EU initiatives which support emerging industries.

This chapter will introduce you to EACP, the European Aerospace Cluster Partnership, and SME4SPACE, a specified cluster for SME's acting in the space industry as well as to other 29 European clusters.

4.1 EUROPEAN AEROSPACE CLUSTER PARTNERSHIP

Name:	European Aerospace Cluster Partnership
Territorial Area:	Europe
Technological Domain/Sector:	Aerospace Technology

The European Aerospace Cluster Partnership (EACP) is open to aerospace clusters in member states of the European Union and fosters the collaboration between European aerospace clusters. Therefore, the EACP aims to establish closer inter-cluster relationships between clusters, industry stakeholders and policymakers within the European Union's space industry to strengthen the EU's overall position within the global aerospace market.

The EACP network operates informal, decentralised and flexible. Workforces are based on working groups like in temporary project consortia and bi- or multilateral ad-hoc partnerships. This goal is pursued within three major fields of action:

- Knowledge exchange: Cluster excellence, Funding schemes, Role of clusters
- Push Innovation: Skills & qualification, EU projects, Connect member clusters
- EU-Position: Internationalisation, Supply chain infrastructure, Global competitiveness

The EACP has five different working groups, which are internalisation, skills, strategy, supply chain and technology. The EACP consists of 42 aerospace clusters from 17 different countries.

Link: <http://www.eacp-aero.eu/>

4.2 SME4SPACE

Name:	SME4SPACE
Territorial Area:	Europe
Technological Domain/Sector:	n/a

SME4SPACE (S4S) is part of the SpaceUp Consortium and is a private, not-for-profit organization, legally incorporated under the Belgian Law, whose aims are:

- Carrying out research activities in space, innovative and related sectors;
- Defining and defending common positions; representing the SMEs with public authorities, i.e. the European Space Agency, the European Union and its related agencies;
- Organising seminars and information sessions;
- Organising a network of clusters and SMEs in order to increase the possibilities for cooperation and related activities.

S4S presently consists of 18 Working Members (Associations/Clusters):

- [Adriatic Aerospace Association](#) – Croatia
- [Aerospace Valley](#) – France
- [AIPAS](#) – Italy
- [CASTRA](#) – Bulgaria
- [CenSec](#) – Denmark
- [Czech Space Alliance](#) – Czech Republic
- [GLAE](#) – Luxembourg
- [Hungarian Space Cluster](#) – Hungary
- [Hellenic Association of Space Industry](#) – Greece
- [Irish Space Industry Group](#) – Ireland
- [Latvian Space Industry Association](#) – Latvia
- [Lithuanian Space Association](#) – Lithuania
- [Madrid Aerospace Cluster](#) – Spain
- [Slovak AeroSpace Cluster](#) – Slovakia
- [UKspace](#) – UK
- [SpaceNed](#) – The Netherlands
- [Space PL](#) – Poland
- [VRI](#) – Belgium

and 15 Individual Company Members.

SME4SPACE VZW is the ideal partner for carrying out dissemination activities especially with respect to SMEs, thanks to its international profile and its capacity to represent the interests of a network of space SMEs (more than 580) covering 20 European Countries. Furthermore, each member has a network of contacts with other companies, Universities or Associations of their own country and abroad, thanks to which it is possible to extend the geographical coverage (up to 780 members).

Link: <https://www.sme4space.org/>

4.3 AUSTRIA: AUSTROSPACE

Name:	Austrospace
Territorial Area:	Austria
Technological Domain/Sector:	Earth observation, satellite navigation, telecommunications, transport, space research

The non-profit organisation Austrospace is the association of the Austrian space industry and research institutions. The association focuses on providing comprehensive information on Austrian space activities and representing the common interests of Austrian suppliers and users of space technology towards Austrian authorities and international organisations.

Austrospace is the association of 20 Austrian companies and institutions with a focus on space technology and research. These members cover a wide range of space technologies and applications in the fields of telecommunications, navigation, earth observation, meteorology, space transportation and space research. In recent years Austrospace has expanded its customer network from the European to the global space market. Scientific cooperation has been established with space agencies worldwide.

Among the members of the organisation are:

- Aerospace and Advanced Composites
- Atos IT Solutions and Services
- TTTECH Computertechnik AG
- ENPULSION
- EODC Earth Observation Data Centre for Water Resources Monitoring GmbH
- EOX IT Services GmbH
- University of Applied Sciences Wiener Neustadt
- GeoVille Information Systems and Data Processing GmbH
- JOANNEUM RESEARCH Forschungsgesellschaft mbH DIGITAL
- Institute for Information and Communication Technologies
- Magna Steyr Fahrzeugtechnik AG & Co KG, Division Aerospace
- OHB Digital Solutions GmbH
- The Austrian Research Promotion Agency FFG
- Austrian Academy of Sciences ÖAW
- RUAG SPACE Austria
- Seibersdorf Labor GmbH
- Technical University Graz

Sectoral and Industrial Focus

Sectoral Industries: Space Industry

Technology fields: Telecommunications, Navigation, Earth observation, Meteorology, Space transportation, Space research

Link: <https://www.austrospace.at/index.html>

4.4 BELGIUM: BELGOSPACE

Name:	Belgospace
Territorial Area:	Belgium
Technological Domain/Sector:	Aerospace Technology

Belgospace is the Belgian space industry association and positioned at federal level. It is a forum where common problems and the main space options affecting Belgium can be discussed from an industrial perspective and comprises most of the Belgian companies engaged in space technology. Moreover, the association promotes the dialogue between the academic world and industry while defending all interests of the sector. The members of the association include Cegelec, Gillam-Fei, Koninklijke Militaire School, Newtec Cy, S.A.B.C.A., Sonaca, Space Applications Services, Spacebel, Techspace Aero, Thales Alenia Space Antwerp, Thales Alenia Space ETCA, Verhaert Space.

The activities of Belgospace include:

- Promoting ESA research programmes such as the General Support Technology Programme (GSTP) and the Telecommunications Systems Programme (ARTES)
- Involving Belgium more in European space policy
- Promoting Belgian competences to large companies as well as to the government.
- Carrying out actions at universities and higher education to ensure that the theses include research into new applications using GALILEO and GMES.

Sectoral and Industrial Focus

Sectoral Industries: Space Industry

Technology fields: Aerospace Technology

Link: <https://www.agoria.be/nl/Home-Belgospace>

4.5 BELGIUM: FLAG

Name:	FLAG
Territorial Area:	Flanders, Belgium
Technological Domain/Sector:	Aerospace Technology

FLAG is a 36-year old non-commercial cluster association of research institutions, SMEs and start-ups. It is active in aeronautics as well as in related technology sector and supports their members' development as well as the improvement of the overall Flemish aerospace sector. About 60% of the cluster is financed through membership fees while the remaining 40% come from public funding. FLAG works together with Flanders Innovation & Entrepreneurship (VLAIO) and follows its *VLAIO IBN Cluster Policy*. The goal of this policy is to increase the competitiveness of the Flemish aeronautical industry through active and sustainable collaboration between Flemish companies, research institutes and universities.

Key services provided by the cluster include

1. Assistance to the acquisition of funding with strategic partnerships.
2. Promoting research and development within its members.
3. Facilitating networking between members and development of business opportunities.
4. Access to the European Internal market.
5. Internationalisation support (= Access to third countries markets).
6. Access to public support (regional/national programmes, innovation vouchers, etc.).
7. Direct advisory services.
8. Facilitation of collaboration between members.

A particular focus for FLAG is to support its members in the participation of international salons, with each year a larger delegation of Belgian companies attending these events. FLAG also provides a start-up friendly environment, by supporting them to extend their network; to learn about "good practices" and, in general, by helping start-ups to find their way to get support on a Belgian/European level.

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence
Technology fields:	Aeronautical technology / Avionics Aircraft
S3 EU priority areas:	Aeronautics, Aeronautics & Environment

Link: <http://www.skywin.be/en/organization>

European Cluster Collaboration: [FLAG](#)

4.6 BELGIUM: SKYWIN

Name:	Skywin
Territorial Area:	Wallonia, Belgium
Technological Domain/Sector:	Aerospace Technology

Skywin is an 11-year old aerospace cluster from Wallonia, Belgium. It is an association without commercial purpose for companies (including OEMs, SMEs and start-ups), research organisations and training centres. It is engaged in public-private partnerships and in the implementation of innovative, collaborative projects in space, aeronautics and other applications such as engineering and defence. Even though the priority sector of the cluster is space and aeronautics, creative and digital industries are other emerging industries involved in the cluster's work. Half of the financing of the cluster comes from public funding, 40% from membership fees and the remaining 10 % from chargeable services.

Skywin's strategy is supported by regional authorities and differs depending on the targeted sector (Aeronautics or Space). For aeronautics, the aim is the development of high-tech products meeting the market demand, while for the space sector, the goal is to develop applications and related services. The Member's activities cover the seven main segments of the space sector, which are ground segment, launchers and spacecraft, satellites, earth observation instruments, space equipment testing, ground satellite applications and space science.

A core service offered by Skywin to its members is the internationalisation through:

- Support in the definition of an (international) commercial strategy
- Coordinating industrial cooperation activities and providing assistance to its members in responding to European project calls
- Supporting members in the participation of international salons, like Le Bourget, Farnborough, Maks (Moscow & Singapore Airshow).

Those services are offered additionally to the support of research and development, training of its members, the development of their business and the promotion of young companies and start-ups.

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence
Technology fields:	Aeronautical technology / Avionics Satellite Navigation Systems
S3 EU priority areas:	Aeronautics, Space

Link: <http://www.skywin.be/en/organization>

European Cluster Collaboration: [Skywin](#)

4.7 BELGIUM: SPACE 4.0 – FLEMISH SPACE INDUSTRY

Name:	Flemish Space Industry
Territorial Area:	Flanders, Belgium
Technological Domain/Sector:	Aerospace Technology

VRI (Flemish Space Industry) is a 20-years old association without commercial purpose, of Flemish research centres, educational institutions and companies, including OEMs and SMEs but without involving start-ups or the regional government. Cluster activities managed under the label "Space 4.0", focus exclusively on the space sector and its applications. In matters of financing, 50% of the cluster is supported by the Flemish regional government. The other 50% come from the membership fees.

The cluster strategy is a niche strategy within the industry and was developed by the Flemish Space Industry members (Nederlands: Vlaamse Ruimtevaartindustrie, VRI). The strategy is aligned with the timeline of the Flemish regional policy advice strategy on space, from the Flemish Advisory Council for Innovation & Enterprise (Nederlands: Vlaamse Adviesraad voor Innoveren & Ondernemen, VARIO). This last strategy is named Flanders Space: a Strategy for the Flemish Space Economy.

The main service of the cluster is to pursue the internationalisation of its members by promoting the collaboration with at least one non-Belgian partner. Since all ESA Programmes and Invitations to Tender (ITT) are international by default, cooperating with these programmes is of great interest for Space 4.0.

Space 4.0 also offers assistance to the acquisition of third-party funding, supports the collaboration and transfer of research and development among its members, promotes further training, and supports the growth and business development especially of young SMEs.

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence
Technology fields:	Guidance and control Space Exploration and Technology
S3 EU priority areas:	Safety & security, Space

Link: <http://www.skywin.be/en/organization>

European Cluster Collaboration: [Space 4.0](#)

4.8 ESTONIA: ESTONIAN SPACE OFFICE

Name:	Estonian Space Office
Territorial Area:	Estonia
Technological Domain/Sector:	Aerospace Technology

The Estonian Space Office (ESO) is a unit established within Enterprise Estonia. Enterprise Estonia is a national foundation that aims to develop the Estonian economy through developing Estonian enterprises and boosting export capacity, increasing tourism revenue and bringing high value-added foreign investments to Estonia.

Moreover, Enterprise Estonia is the developer of the Estonian space policy and space business, and it promotes international cooperation, providing Estonian companies with new business opportunities on markets contributing to high technology.

In this regard, the Estonian Space Office of Enterprise Estonia offers:

- Mediation of invitations to tender of ESA
- Consultation of project developers
- Organisation of information days, seminars, conferences, study trips and match-making events

Sectoral and Industrial Focus

Sectoral Industries: Space Industry

Technology fields: Space Technology

Link: <https://www.eas.ee/teenus/estonian-space-office/?lang=en>

4.9 FINLAND: SPACE FINLAND

Name:	Space Finland
Territorial Area:	Finland
Technological Domain/Sector:	Aerospace Technology

Space Finland is a site hosted by *Business Finland* which aims to highlight the benefits of space activities, introduce how space activities influence daily life, inform about Finnish space knowhow, share successful company and research cases, and encourage people to learn about space.

Business Finland is a Finnish governmental organisation for innovation funding and trade, travel and investment promotion. It offers funding and advisory services for companies registered in Finland that seek to grow in global markets. Its strategy is to enable companies to grow internationally and also create world-class business ecosystems and a competitive business environment for Finland.

Business Finland maintains a list of Finnish companies in space technology industry for foreign companies and research parties that search for partners. Besides, the organisation offers funding, networks and export services for developing international space-related business in the frame of its *New Space Economy Program*. The objective of the program is to double the exports of the participating companies by 2022 and to reach an annual turnover of 600 million euros in the services provided by the sector.

Thereby, the program funds start-ups that are reforming the sector, growth-seeking manufacturing companies and businesses focussing on data utilisation. Companies must be registered in Finland and the program also funds Finnish space research.

Sectoral and Industrial Focus

Sectoral Industries: Space Industry

Technology fields: Aerospace Technology

Link: <http://spacefinland.fi/>

<https://www.businessfinland.fi/en/for-finnish-customers/services/programs/new-space-economy/>

4.10 GERMANY: ANWENDUNGSZENTRUM GMBH OBERPFAFFENHOFEN

Name:	Anwendungszentrum GmbH Oberpfaffenhofen
Territorial Area:	EU member states
Technological Domain/Sector:	Aerospace Technology

The Anwendungszentrum GmbH Oberpfaffenhofen (AZO) is an international networking and branding company for European space programmes, supporting entrepreneurship with more than 700 company foundations in Europe.

AZO established a leading European space cluster innovation network for the satellite downstream market, and provides a marketing and promotion platform, incubation and expert network, as well as regional funding programmes with the objective to increase the uptake of business cases.

In the frame of their “Innovation Masters Series” , AZO organises space-related innovation competitions in cooperation with the European Commission (EC), the European Space Agency (ESA), the Federal Ministry of Economics and Technology Germany (BMVI), German Aerospace Center (DLR), as well as a number of major industrial partners such as Airbus, BayWa, Planet, Astrosat and others. In those competitions, AZO awards product innovations with well-known partners and established associated accelerator programmes in almost all competitions.

Besides, AZO offers the incubation programme *ESA Business Incubation Centres (BICs) Bavaria and Northern Germany* which supported more than 165 company foundations to date and runs a business angel network which invested more than EUR 50 million Venture Capital in 2018.

Sectoral and Industrial Focus

Sectoral Industries: Space Industry

Technology fields: Aerospace Technology

Link: <https://azo-space.com/>

4.11 GERMANY: AVIASPACE BREMEN E. V.

Name:	AviaSpace Bremen e.V.
Territorial Area:	Bremen, Germany
Technological Domain/Sector:	Aerospace Technology

AviaSpace Bremen e.V. (ASB) is the only cluster member in the SpaceUp consortium. The cluster is a 13-year old incorporated association of dedicated companies and application-oriented research institutes in the space and aeronautics sector in the Federal State of The Free Hanseatic City of Bremen and the surrounding areas. Its members are OEMs, SMEs, start-ups, research institutes as well as the regional government. The financing sources are mainly membership fees and public funding, 60% and 35% respectively, complemented with a small percentage (5%) of chargeable services.

The strategy defines the following goals for the cluster:

- Stronger visibility of the aeronautics and space industries within and outside of Bremen as well as an enhanced image of its companies through the strength of the cluster.
- Enhanced value-adding-chain by increasing competitiveness and creation of innovation as well as settlement of companies or start-ups at site.
- Preservation and extension of participation in trans-national programmes from ESA
- The goals of the strategy are focused on five areas of competence, based specifically on the competences of the Bremen industry and science: lightweight design and production processes, cargo loading systems, remotely piloted aircraft systems (RPAS), satellites and downstream products and launcher systems and astronautics.

The key areas of the cluster are network formation, technology transfer, and economic growth through fostering young entrepreneurs and start-ups in particular. A success story from 2018 of this strategy is the start-up PlanBlue, which won the Overall Space Oscar prize, endowed with 100.000 € of the Galileo Masters 2018 competition, Marseille, France.

In 2018 ASB was a key player in important events of the space and aeronautics communities especially the 69th International Astronautical Congress (IAC) in Bremen.

Link: <https://www.aviaspace-bremen.de/?lang=en>

4.12 GERMANY: BAVAIRIA

Name:	bavAIRia e.V.
Territorial Area:	Bavaria, Germany
Technological Domain/Sector:	Space Technologies and Applications, Aviation

bavAIRia e. V. is a Germany aerospace and navigation cluster commissioned by the Bavarian State Government that aims to identify the Bavarian core competencies in aviation, aerospace and space applications. Regarding aerospace and space applications, bavAIRia is linking key space technology players with customer and users, organises events such as networking and discussion events and is facilitating co-working sessions for its members.

BavAIRia is offering:

- Platforms, to facilitate interaction between end users, companies, scientists, researchers and the political sphere;
- Contacts, to provide access to networks;
- Expertise in applying for financing and
- Support in implementing marketing measures and in organising specialist seminars and information events with the cluster's members and beyond.

Sectoral and Industrial Focus

Sectoral Industries:	Space Industry
Technology fields:	Space Technologies and Applications
	Aviation

Link: <https://www.bavairia.net/en/bavairia-ev/>

4.13 GERMANY: BERLIN-BRANDENBURG AEROSPACE ALLIANZ E.V.

Name:	Berlin-Brandenburg Aerospace Allianz e.V.
Territorial Area:	Berlin-Brandenburg, Germany
Technological Domain/Sector:	Aeronautical technology / Avionics, Aircraft

The Berlin-Brandenburg Aerospace Allianz (BBAA) is the trade association for the aerospace industry in Germany's capital region. With around 100 members, from highly specialised small businesses to global enterprises, researching institutions and universities, the association represents the majority of the approximately 17,000 people working in the aerospace industry in Berlin and Brandenburg.

The BBAA uses its network of businesses, scientific and national institutions and international government ministers and authorities to raise awareness of key regional players beyond the boundaries of Berlin and Brandenburg and thus improve international competitiveness.

The core services from BBAA are

- Initiating, supporting and implementing R&D projects to strengthen the competitiveness of member companies
- Support with gaining access to new key markets
- Targeted promotion of key topics
- Promoting Berlin and Brandenburg as a location for the aerospace industry
- Participation in committees, associations and trans-regional initiatives

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence Transportation and Logistics
Technology fields:	Aeronautical technology / Avionics Aircraft
S3 EU priority areas:	Aeronautics

Link: <https://www.bbaa.de/1/en/1/translate-to-english-ueber-uns>

European Cluster Collaboration: [BBAA](#)

4.14 GERMANY: HANSE-AEROSPACE E.V.

Name:	Hanse-Aerospace e.V.
Territorial Area:	International
Technological Domain/Sector:	Aerospace Technology

Hanse-Aerospace e.V. is an independent association for companies in the aerospace industry with the aim of networking small and medium-sized companies in Germany but also worldwide. Today, the association counts more than 150 member companies from Germany, the USA and many other countries. In addition to manufacturing and development companies, service providers, consulting firms and educational institutes have also organized themselves in the association. Today, more than ten per cent of all specialists working in the German aerospace industry are employed in member companies of Hanse-Aerospace e.V.

The main tasks of Hanse-Aerospace e.V. include:

- Representing the interests of its member companies and exerting influence on the political and economic level through extensive public relations work.
- Promotion of the establishment and maintenance of regional, supra-regional, national, European and international networks and strengthening of relations with customers, partners and suppliers.
- Organisation of congresses, workshops and events on relevant topics of the aerospace industry, such as politics, funding programmes or digitalisation
- Development of SME-specific methods and tools for the challenges of tomorrow within the framework of working groups and research projects. Supporting members in the formation, design and implementation of joint research projects.

As Hanse-Aerospace Wirtschaftsdienst GmbH, the wholly owned subsidiary of the association offers members the following services:

- Organisation of extensive joint stands at national and international aerospace trade fairs (e.g. Aircraft Interiors Expo, Paris Air Show, Farnborough Air Show, ILA Berlin)
- Initiation and implementation of research and development projects
- Development and support of digital network projects to promote national and international cooperation
- Comprehensive consulting services for companies in the aerospace industry and related sectors such as logistics
- Support in the implementation of digitisation processes for companies
- Support in the integration of innovative business processes into the corporate structure
- Competence management in the supply chain
- Development of concepts for "Industrial Performance", "Supply Chain Management", "Predictive Maintenance" and "Spare Parts Logistics"

Link: <https://www.hanse-aerospace.net/de/startseite>

4.15 GREECE: SI CLUSTER

Name:	Si Cluster
Territorial Area:	Greece
Technological Domain/sector:	Aerospace Technology

The Si-Cluster is a space-technology ecosystem in Greece and its members represent an important part of the global value chain of space technologies. The si-Cluster consists of around 55 members from large businesses, SMEs, innovation ecosystem actors, including academia, research institutes, European, regional and central governmental and other stakeholders involved in this demanding technological field.

Aiming to develop Space Technologies and Applications within the Greek industry, Corallia is the Cluster Facilitator of the Si-Cluster, which is instrumenting the creation of space technology innovations Corallia offers

- Support for new venture creation,
- Training programs to expand innovation-knowledge,
- Connecting and networking to form partnerships among members,
- Establishing strong ties between universities and research institutes,
- Providing incentives for Venture Capital and Business Angels and
- Supporting IPR protection and patent submission.

Sectoral and Industrial Focus

Sectoral Industries: Space Industry

Technology fields: Aerospace Technologies and Applications

Link: <http://www.si-cluster.gr/en/about-si-cluster.html>

4.16 ITALY: CAMPANIA AEROSPACE DISTRICT

Name:	Campania Aerospace District
Territorial Area:	Italy
Technological Domain/Sector:	Aerospace Technology

Campania Aerospace District (Italian: Distretto Aerospaziale della Campania, or DAC) is a limited liability company that pursues to consolidate the role of its members' network within the national and international aerospace community. The network is focused on strategic projects for the aerospace sector and its industrial applications, including emerging creative industries. The members of this cluster are large enterprises, SME's, universities and research centres from Campania. The financing of DAC consists of 66.44% of private sources and 33.56% of public funding.

The cluster does not follow specific regional strategies but was established under the auspices of the Italian Ministry of Education, Universities and Research (Italian: Ministero dell'Istruzione, dell'Università e della Ricerca) in the framework of the National Operative Programme for Research and Competitiveness 2007-2013.

The main service of DAC is to promote research, development and training within its members. For that reason, DAC supports research led by industry, with a specific industrial application in mind in order to efficiently meet the Industries needs and catch market opportunities. DAC also promotes training activities within an advanced environment of aeronautical production to its members. Additional cluster services are internationalisation of the networks' members, as well as support to SME emerging creative industries by bringing together the aerospace sector.

DAC's transversal initiative tends to enhance the capabilities of the whole regional network and enhances its visibility with the outside Aerospace world.

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence
Technology fields:	Aircraft Space Exploration and Technology
S3 EU priority areas:	Aeronautics & environment, Space

Link: <http://www.daccampania.com/>

European Cluster Collaboration: [DAC](#)

4.17 ITALY: DISTRETTO AEROSPAZIALE DELLA SARDEGNA-SARDINIA AEROSPACE DISTRICT

Name:	Distretto Aerospaziale Della Sardegna-Sardinia Aerospace District
Territorial Area:	Sardinia, Italy
Technological Domain/Sector:	Aerospace Technology

The Space Agency Sardinia AeroSpace District -DASS Scarl was founded in October 2013 and aims to promote cooperation between the research centres, universities and space companies available in Sardinia in order to achieve significant business opportunities and suitable opportunities for growth and innovation in the space segment.

The shareholders of DASS Scarl are represented by 24 companies, i.e. Accademiasapr Srl, Aermatica Srl, Aeronike Srl, Avio SpA, Centro Italiano Ricerche Aerospaziali ScpA, RINA Consulfig - Centro Sviluppo Materiali SpA, Fondazione di Sardegna, Gem Elettronica Srl, Geodesia Tecnologie Srl, Innovative Materials Srl, Karalit Srl, Lion Consulting Srl, MR8 Srls, Nemea Sistemi Srl, Nurjana Technologies Srl, Oben Srl, Opto Materials Srl, Poema Srl, Soliani Emc Srl, Space Srl, Spacearth Technology Srl, 3D AEROSPAZIO Srls, UavItalia Srl and Vitrociset SpA and 5 public organisations, i. e. Consiglio Nazionale delle Ricerche, CRS4 Surl, Istituto Nazionale di Astrofisica, Università di Cagliari and Università di Sassari

DASS focuses on the following strategic objectives:

- Create conditions for the development and growth of Sardinian aerospace firms
- Encouraging the emergence of new industrial realities, including through a strong incentive for cooperation between SMEs and the research system
- Strengthening the ability to deliver systems and products with a high level of integration to reach the higher value-added part of the production chain
- Seizing opportunities for structural cooperation with the main global players, starting with the launch phases of new projects
- Identify and support research programmes that meet the district's objectives, concentrating resources on well-defined technological sectors that can guarantee employment and development
- Modernisation, development and strengthening of sources of supply and the infrastructure system
- Promotion of cooperation with other areas
- Promotion and support of vocational education and training activities for the aerospace sector
- Development of internationalisation initiatives and marketing policies

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace
Technology fields:	Earth Observation, Technologies for robotic and human space exploration, Advanced cock-pit system for aeronautics, System for predicting trajectories of orbiting objects

Link: <http://www.dassardegna.eu/>

4.18 ITALY: DISTRETTO TECNOLOGICO AEROSPAZIALE

Name:	Distretto Tecnologico Aerospaziale
Territorial Area:	Puglia, Italy
Technological Domain/Sector:	Aircraft and Propulsion

The Distretto Aerospaziale Pugliese is a non-profit organisation created in 2009 and also known as Distretto Tecnologico Aerospaziale (DTA), with members from industry and academia. Its members are OEMs, SMEs, start-ups, research organisations, as well as the regional government acting in the space and aeronautics sector including its services, in the Southern regions of Italy more specifically in Puglia.

The financing of the cluster comes mostly from public funding. Currently, eight projects receive national funding and two are funded through the programmes of the European Union: 7th Framework Programme for Research and Technological Development (FP7) and Horizon 2020. The strategy of the cluster is in line with SmartPuglia 2020, the Smart Specialisation Strategy for the region of Puglia. The strategy focuses on three priority areas of innovation:

- Sustainable Manufacturing (smart factory, aerospace, mechatronics)
- Health and the environment (green and blue economy, food processing, sustainable construction, cultural heritage and tourism)
- Digital, creative and inclusive communities (cultural and creative industry, services, social innovation, design, non-R&D innovation).

The goals of the strategy are to strengthen the competitiveness of the private sector, promote the development of the human resources, support the innovation, spread digitisation and promote the internationalisation. DTA proposes and implements research, training and innovation projects with its members and adopts a systematic approach that allows them to reach ambitious objectives on a national and international level, at the same time promoting the business development of its members.

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence Education and Knowledge Creation
Technology fields:	Aircraft and Propulsion
S3 EU priority areas:	Aeronautics, Remotely piloted aircrafts

Link: <https://www.dtascarl.org/en/at-a-glance/>

European Cluster Collaboration: [DTA](#)

4.19 ITALY: IR4I AEROSPACE CLUSTER

Name:	Innovation & Research for Industry (IR4I)
Territorial Area:	Emilia-Romagna, Italy
Technological Domain/Sector:	Aircraft, Space Exploration and Technology

The 6-year-old Innovation & Research for Industry (IR4I) cluster promotes, as stated in its name, the level of innovation and research in space and aeronautics sector for the Emilia-Romagna region. Besides the mentioned sector, IR4I also works with mechatronics and transport systems as well as with emerging industries in mobility technologies. Company members of the cluster are OEMs, SMEs and research institutions endowed with the professional experience required and the will to join their forces, in order to compete globally in the Aerospace industry. As a source of financing, IR4I partially depends on the contribution of the European Regional Development Fund (ERDF).

The cluster has a formalised strategy that besides its focus on addressing the internationalisation of its members is also accord with the EU Cohesion Policy 2014-2020 by supporting Innovation and research in addition to small and medium-sized enterprises.

The cluster IR4I promotes the acquisition of adequate financial resources amongst its members. Moreover, the cluster supports its members by promoting their participation at international missions, events, studies, visits and fairs. Some of those events where the cluster supports the presence of its members are: Le Bourget, Toulouse and Farnborough as IR4I Companies interface daily with global markets. The cluster's mission in this field is that of improving and supporting joint actions of internalisation to permit the group SMEs which are part of the Cluster to compete globally in the aerospace industry and to profit of the networking opportunities. That way, companies with an entrepreneurial spirit within the cluster can show their capacity and compete in international markets. In the same aerospace sector, IR4I collaborates with the Italian Cluster for Aerospace Technology (Italian: Cluster Tecnologico Nazionale Aerospazio).

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence
Technology fields:	Aircraft, Space Exploration and Technology
S3 EU priority areas:	Aeronautics & environment, Space

Link: <http://www.ir4i.it/index.aspx>

European Cluster Collaboration: [IR4I](#)

4.20 ITALY: LAZIO CONNECT

Name:	Lazio Connect
Territorial Area:	Lazio, Italy
Technological Domain/Sector:	Precision agriculture, GIS Geographical Information Systems

Lazio Connect was established nine years ago as a registered association to support businesses, industrial consortiums, technological industry parks and universities as well as research organisations in space, aeronautics and their applications for the region of Lazio in Italy; however, the cluster has no partners from the regional government. The financing of the cluster comes mostly from membership fees (50%) and additionally from other private sources (30%) as well as from chargeable services (20%).

Lazio Connect promotes collaboration between large enterprises, SME, start-ups and academia by reducing factors that prevent collaboration between companies and supporting the research system in the Lazio industrial area. In addition to the aerospace sector, Lazio Connect works with precision agriculture and geographical information systems (GIS) as well as with emerging digital and environmental industries.

This association follows the Smart Specialization Strategy Lazio – Space Agenda Lazio according to the Lazio aerospace technical district established by the Ministry of Economy and Finance and Ministry of Education, University and Research from the region of Lazio.

Cluster members receive support in their internationalisation efforts, help in gaining access to third country markets as well as public support. Collaboration between members is encouraged, research and development efforts are supported, and training is offered. Lazio Connect offers as well as support to young SMEs, entrepreneurs and start-ups. Another characteristic of the cluster is the facilitation of cross-sectorial cooperation.

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence Agricultural Inputs and Services
Technology fields:	Precision agriculture GIS Geographical Information Systems
S3 EU priority areas:	Aeronautics, Safety & Security

Link: <https://www.lazioconnect.it/en/home-2/>

European Cluster Collaboration: [Lazio](#)

4.21 ITALY: LOMBARDIA AEROSPACE CLUSTER

Name:	Lombardia Aerospace Cluster
Territorial Area:	Lombardi, Italy
Technological Domain/Sector:	Aeronautical technology / Avionics Space Exploration and Technology

Lombardia Aerospace Cluster is a nine-year-old registered association with legal property of companies, universities, and research centres in the space and aeronautics sector, but it does not include start-ups or regional governmental participants. The aerospace industry in Lombardy has the complete value chain as well as the required expertise and technology to produce helicopters, aeroplanes and satellites starting with the material and ending with the provided services of the final products. The financing of the cluster comes from public funding and membership fees.

Lombardia Aerospace Cluster offers to its members support for technology and knowledge transfer, facilitation of collaboration between members, provision and facilitation of access to training for members, as well as business development and internationalisation support.

OBJECTIVES

- Promote conditions for the growth of the aerospace companies in Lombardy and the creation of new firms by encouraging partnerships between SMEs
- Facilitate innovation as a fundamental characteristic of the Aerospace District
- Encourage support to research programs regarding SMEs particularly
- Catch all opportunities to make strategic collaborations with the major players in Lombardy Region, until preliminary phases in new projects
- Stimulate partnership and marketing by promoting the visibility of manufacturers with participation in international meetings
- Qualify as an institutional partner of the Lombardy Region about Industrial Policies issues in Aerospace Business

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence
Technology fields:	Aeronautical technology / Avionics Space Exploration and Technology
S3 EU priority areas:	Aeronautics, Space

Link: <https://www.aerospacelombardia.it/en/>

European Cluster Collaboration: [Lombardia Aerospace Cluster](#)

4.22 ITALY: UMBRIA AEROSPACE CLUSTER

Name:	Umbria Aerospace Cluster
Territorial Area:	Umbria, Italy
Technological Domain/Sector:	Aerospace and Defence Technologies

The Umbria Aerospace Cluster is a non-profit organisation with the objective to represent, promote and develop, both inside and outside the Umbria region, the specific characteristics of Umbrian companies operating in the aerospace and defence sectors. In pursuing this objective, the association carries out activities with the following objectives:

- Encouraging Member companies to put in place operational integration mechanisms in different corporate functions, as well as facilitating aggregations of purpose;
- Fostering connections among enterprises of Umbria and those of other regions of Italy and foreign countries, as regards individual primary producers, as well as territorial aggregations, such as centres, districts and clusters;
- Fostering access to production programmes sponsored by companies that are part of the Association or by external primary principals;
- Fostering and organizing the participation of its member enterprises in Community, national or regional programmes, in the field of research and innovation within the areas of expertise of the Association;
- Promoting refresher courses for the top managers, supervisors and staff of the member companies;
- Participating in or promoting events, meetings, seminars and conventions of general interest;
- Organising visits and study trips;

The Umbria Aerospace Cluster includes 28 industrial partners and the University of Perugia. Most companies in the cluster are involved in the development of dual-use components and systems, which can, therefore, be used for both military and civil aviation. The cluster has two tier-1 companies in the F35 program. Some companies are more dedicated to the military sector, in particular in the field of ground control stations for drones and missiles and on-board control software, but also in solutions for logistic facilities (self-loading military vehicles, shelters equipped for military airports, etc.). Within the cluster, the companies are able to collaborate with the most important companies in the sector in Italy and throughout Europe. The cluster brings together three large companies and 25 SMEs. The cluster's employees represent 4% of all industrial employment in the Umbria Region.

Sectoral and Industrial Focus

Sectoral Industries: Aerospace and Defence

Technology fields: Dual-use Components and Systems for military and civil aviation

Link: <http://umbriaaerospace.com/en/>

4.23 LATVIA: GREEN-TECH LATVIA

Name:	Green-Tech Latvia
Territorial Area:	Latvia
Technological Domain/Sector:	Green and Smart Technology

The Green-Tech-Cluster is an organisation developed for cross-sectoral cooperation, bringing together companies, educational and research institutions and other organisations that are partly or fully active in the green and smart technology sectors.

The cluster includes industries that are important for the sustainable development of Latvia and are also among the priority sectors of the Smart Specialization Strategy: (Mechanical) engineering, information and communication technology and space technology, energy-efficient buildings, efficient production and environmentally friendly raw materials. Currently, the cluster consists of 66 members.

The objectives of the Green Tech Cluster are:

- Promotion of cooperation between companies and research, education and knowledge transfer organisations at local and international level. This is intended to contribute to increasing the competitiveness of these companies, to increasing the volume of exports and the volume of products and services with high added value, as well as to innovation and the development of new products.
- To promote the growth and international cooperation (including an increase in export volume) of micro, small and medium-sized enterprises active in the "green" and "smart" technology sectors through an effective business network (including large distributors) and strong support for educational and research organisations and business support organisations.

Sectoral and Industrial Focus

Sectoral Industries: Aerospace and Defence

Technology fields: (Mechanical) engineering, information and communication technology and space technology, energy-efficiency technology, efficient production and environmentally friendly raw materials

Link: <http://greentechlatvia.eu/en/home/>

4.24 LITHUANIA: LITHUANIAN SPACE ASSOCIATION

Name:	Lithuanian Space Association
Territorial Area:	Lithuania
Technological Domain/Sector:	Automation, Robotics Control Systems, Network Technology, Network Security

The Lithuanian Space Association (LSA) was founded in 2009 to connect research institutes, OEMs, SMEs and start-ups active in the domains of space, aeronautics and its applications.

Besides coordinating the national space technology platform and the development of the Lithuanian science and space sector, the cluster has a strong international focus. Business partnerships at bilateral, international and multilateral levels with multiple countries and organisations have been established to support scientific development and its technological strategy.

The financing of the cluster is entirely based on membership fees. For this contribution, cluster members can acquire assistance in seeking third party funding, receiving support in collaborative technology development, technology transfer and business development. LSA also promotes human resources development and further training of its members.

The Lithuanian space cluster has several collaborations with other Lithuanian clusters and organisations, like the Lithuanian Laser Association, LINPRA (Association of Lithuanian engineering and technology companies) and Infobalt (ICT industry association). The main objectives and tasks of LSA are

- Promote and support the Lithuanian education, research and innovation
- Coordinate National space technology platform and the National space technology cluster activities and develop, consolidate the Lithuanian science and business sectors in space;
- International integration facilities, joining the European space activities, to achieve favourable conditions for the competitiveness of the sector in Europe and in the world.

Sectoral and Industrial Focus

Sectoral Industries: Aerospace Vehicles and Defence

Technology fields: Automation, Robotics Control Systems
Network Technology, Network Security

S3 EU priority areas: Aeronautics and Environment

Link: <https://www.bssc.pl/>

European Cluster Collaboration: [LSA](#)

4.25 SLOVENIA: SPACE-SI

Name:	Space-Si
Territorial Area:	Slovenia
Technological Domain/Sector:	Aerospace Technology

The Slovenian Space Science and Technology Excellence Centre SPACE-SI was founded in 2010 by a consortium of academic institutions, high-tech SMEs and large industrial and insurance companies to take advantage of the benefits of small satellite technologies and applications in earth observation, meteorology and astrophysics.

At the Center of Excellence, Space-SI has formed a consortium of academic institutions and small and medium high-tech companies. 46 researchers and engineers work in the following areas:

- Remote sensing
- Meteorology
- Astrophysics
- Micro- and nanosatellite technologies
- Cooperation in international space missions
- Development of a multidisciplinary laboratory for the testing of space technologies
- Satellite communications, hybrid antennas and radar technologies
- Transfer of space technologies to terrestrial applications
- Dissemination of RTD results

The Space-SI Centre of Excellence facilitates the efficient integration of Slovenia into international research in space science and technology. The Centre supports these efforts with a network of strategic EU partners from Sweden, Germany, France, the Netherlands, the UK and Austria, which provide the consortium with access to research and development of the most advanced space missions PRISMA, LAPAN - TUBSAT, VENUS and GAIA.

The RTD activities of SPACE-SI will focus on high-resolution interactive remote sensing and formation flight missions. These objectives are supported by the simultaneous development of micro- and nanosatellite platforms, advanced ground control infrastructure and satellite integration facilities, and a multidisciplinary laboratory for testing satellite systems and components in simulated space environments.

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace
Technology fields:	Small Satellite Technologies, Applications in Earth Observation, Meteorology and Astrophysics

Link: <http://www.space.si/en/about/>

4.26 SPAIN: ANDALUCIA AEROSPACE

Name:	Andalucia Aerospace
Territorial Area:	Andalusia, Spain
Technological Domain/Sector:	Aeronautical technology / Avionics and Aircraft

The Andalucía Aerospace cluster is a one-year-old private association that works to promote the international growth of the Andalusian space & aeronautics sector and its applications. Members are SMEs from Andalusia, currently more specifically from the provinces of Seville, Cádiz and Málaga. The financing of the cluster comes in 75% from the membership fees and the remaining 25% from other private sources.

The principal goals of the cluster are to contribute to the strengthening of the cluster and its members, promote their scientific and technological development, contribute to the training and education of professionals in the aerospace sector, promote the collaboration between the associated companies and other private and public organizations and, finally, to represent its members in public bodies and other organizations.

The clusters purposes are as following:

- Contributing to the strength of the cluster and the positioning of its member companies in the national and international aerospace market.
- Promotion of the sustainable scientific and technological development of the Andalusian aerospace industrial fabric.
- Contributing to the training and education of professionals in the sector.
- Promoting the business excellence through the synergies of the member companies, as well as the execution of high added value activities.
- Promotion and Facilitation the interrelation between the associated companies, combining their interests and defending them to the regional public institutions and organizations.

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence
Technology fields:	Aeronautical technology / Avionics and Aircraft
S3 EU priority areas:	Aeronautics, Space

Link: <https://andaluciaaerospace.com>

European Cluster Collaboration: [Andalucia Aerospace](#)

4.27 SPAIN: HEGAN – BASQUE AEROSPACE CLUSTER

Name:	Hegan
Territorial Area:	Basque Country
Technological Domain/Sector:	Propulsion, Aircraft

Hegan is a private non-profit association with 21 years of experience that brings together the space and aeronautics sector as well as their applications in the Basque Country. Its members are OEMs, SMEs and research institutions leaving aside start-ups and the regional government. The financing of the cluster comes mostly from the membership fees (47%), public funding coming from grants (28%) and chargeable services (25%).

Hegan's strategy is in line with the Basque Country Cluster Policy. This policy has helped since 1990 to strengthen the Basque industrial fabric through cross sectorial cooperation of its clusters with a focus on the internationalisation, technological innovation and business innovation of the region. The strategy and the regional cluster policy promote a cross sectorial cooperation with other clusters in the Basque Country.

The cluster's aim is to represent and promote this sector to ensure its competitiveness in the short-, medium- and long-term through cooperation and innovation among companies and other agents, as a response to strategic challenges in cooperation.

Hegan acts as a Facilitator of Results-Oriented Groups and Engine of Common Strategies and is specialised in

- Development of the Value Chain in Cooperation
- Development of Knowledge in Cooperation
- Positioning in the Market in Cooperation

Sectoral and Industrial Focus

Sectoral Industries:	Aerospace Vehicles and Defence
Technology fields:	Propulsion Aircraft
S3 EU priority areas:	Power generation / renewable sources Advanced manufacturing systems

Link: <http://www.hegan.com>

European Cluster Collaboration: [HEGAN](#)

4.28 SWEDEN: AEROSPACE CLUSTER SWEDEN

Name:	Aerospace Cluster Sweden
Territorial Area:	Sweden
Technological Domain/Sector:	Aerospace Technology

The Aerospace Cluster Sweden (ACS) is a co-operative economic association, established in June 2016 and to date Scandinavia's only formalised cluster within the aerospace sector. Its goal is to boost the position of the region within the space and aeronautics sector. The basic financing of cluster activities comes from public funding.

The cluster's strategy is in line with the Swedish Aviation Strategy, which they helped to develop. This strategy promotes technology and solutions, research, development and innovation, environmental, energy and climate issues, social conditions and airport development in Sweden.

ACS is a bridge between research, business and operations. The cluster has its priorities in internationalisation, human resource development and collaboration within its members. Finally, the cluster collaborates with EACP.

Mission statement provided by ACS:

Aerospace Cluster Sweden is the obvious network and unifying force for everyone who is professionally engaged in the aerospace industry. Through our communities, we create opportunities for business, innovation and growth. In our Airtime Arena, we offer broadcast time for all who want to make their voice heard on aerospace-related issues.

Link: <https://aerospaceclustersweden.com/?lang=en>

4.29 SWEDEN: RIT 2021

Name:	RIT 2021
Territorial Area:	Norrbottnen, Sweden
Technological Domain/Sector:	Aerospace Technology

RIT 2021 is an EU-funded project (structural fund) that started on 1st September 2018 and will last for three years. Since the cluster receives only partial funding through the EU structural funds, the remaining 50% of the budget comes from other private sources. The aim of the project is to create sustainable growth in the region of Norrbotten (North Sweden) and enhancing its role as Sweden's leading space region. The prioritised subjects are space and applications. Through clustering, collaboration, research and test-driven development, the initiative wants to increase the space sectors' capacity and build an ecosystem which attracts people, new establishments and investors. As a consequence of the strong regional focus, the cluster does not promote the internationalisation of the cluster members.

The composition of the cluster is large. Not only research institutes, OEMs and SMEs are part of it, also the regional government and start-ups belong to the target group. The cluster's strategic plan and implementation processes are in line with both, regional growth and regional innovation strategies.

The cluster provides assistance to its members in acquiring third party funding. Activities related to collaborative technology development, technology transfer and R&D, training and human resources development are also foreseen.

RIT 2021 is particularly interested in supporting young SMEs, entrepreneurs and start-ups. Cross-sectoral networking with the "Aerospace Cluster Sweden" and with the "Swedish Composite Innovation Cluster" (SWE-CIC) in Piteå and the national cluster "Big Science Sweden" are also pursued.

Primary target groups of RIT2021 are the following:

- Established space companies
- Regional SMEs that are not in the space business but wish to be so
- Researchers within academia

Link: <https://www.ritspace.se/>

4.30 POLAND: BALTIC SEA & SPACE CLUSTER

Name:	Baltic Sea & Space Cluster
Territorial Area:	Baltic Sea Region
Technological Domain/Sector:	Marine Science, Shipbuilding, Space Technology

The Baltic Sea & Space Cluster is a nine-year-old registered association that promotes the Polish maritime industry and space technology. The members of the cluster include large and small companies as well as start-ups, research institutions and the regional government. All members have an innovative and strong international profile in common.

Part of the financing of the cluster comes from public funding, since it participates in EU programmes with subjects related to the strategy of the cluster. One such programme is ECOPRODIGI, an eco-efficiency project for maritime industry processes in the Baltic Sea Region through digitalisation. Other financing sources were not specified.

The cluster focusses on the sectors of education and knowledge creation, oil and gas production and transportation; blue growth industries, environmental industries; marine science, shipbuilding/repair; as well as maritime economy. It also puts a priority coastal & maritime tourism. Being located in the Pomorskie Region, it represents a key maritime cluster in Central and Eastern Europe and acts as an active player in the Baltic Sea Region and the European Union in general. However, it does not deal directly with space-related assets in spite of its name, but focusses on the maritime sector, with 'Applications' being the only link to the space sector so far.

The Baltic Sea & Space Cluster offers diverse services to its members, like access to public support, promotion of marketing and visibility activities, support of knowledge transfer and organisation of business, science and administration cooperation in a global and regional scale. However, the cluster focuses on taking advantage of its experience in international cooperation and knowledge transfer in international projects.

Sectoral and Industrial Focus

Sectoral Industries:	Education and Knowledge Creation Oil and Gas Production and Transportation
Technology fields:	Marine Science, Shipbuilding
S3 EU priority areas:	Coastal & maritime tourism Shipbuilding & ship repair

Link: <https://www.bssc.pl/>

European Cluster Collaboration: [Baltic Sea & Space](#)

4.31 PORTUGAL: AED CLUSTER PORTUGAL

Name:	AED Cluster Portugal
Territorial Area:	Portugal
Technological Domain/Sector:	Aeronautics, Space and Defence

The AED Cluster Portugal (AEDCP) is the Cluster for the Portuguese Aeronautics, Space and Defence Industries. The AEDCP was created as a private not-for-profit organization in 2016 and in 2017, the cluster received the label of “Strategic National Competitiveness Cluster” for Aeronautics, Space and Defence from the Portuguese Government.

Involving more than 60 entities which are established in Portugal, the Cluster gathers the stakeholders from the three sectors, are able to act as an entry point and a one-stop-shop in Portugal, for all national and international players.

AED Cluster Portugal strategic objectives lie within four main building blocks:

- Funding and Regulatory;
- People and Competences;
- Innovation and Value;
- Markets and Opportunities.

Sectoral and Industrial Focus

Sectoral Industries: Aeronautics, Space and Defence

Link: <http://www.aedportugal.pt/en/#>

5 SCIENCE PARKS AND CENTRES OF EXCELLENCE OF SPACE

Centres of excellence and technology parks are strong key-stakeholders in research, development and innovation activity within the European Space Industry.

Science parks, as well known as technology parks or university research parks, are mostly a purpose-built cluster of research assets like laboratories for experimentation and beyond. Mostly providing working rooms for collaboration and as temporary offices and areas for meetings, great and small, the spaces are designed to strengthen the research, development and innovation activity in science and tech.

Providing and producing stage-of-the-art knowledge, exclusive infrastructure and competencies for specific topics, science parks are a very good address for development and research activities of start-ups.

5.1 IASP

Name:	IASP
Territorial Area:	International
Technological Domain/Sector:	Innovation

IASP is the worldwide network of science parks and areas of innovation. IASP connects the professionals managing science, technology and research parks (STPs) and other areas of innovation and provides services that drive growth and effectiveness for their members. IASP is specialised in the following activities:

- Coordinate an active network of managers of science/technology/research parks, innovation districts and other areas of innovation
- Enhance new business opportunities for members and their companies
- Increase the visibility of our members and multiply their global connections
- Represent parks and areas of innovation at international forums and institutions
- Assist the development of new parks and areas of innovation



² Figure 2 - IASP members world-wide

Having members around the globe, IASP is a strong partner in Research and Development, connecting with the purpose of innovation. Innovation, of which science, technology and research parks (STPs) are a highly specialised type, play a key role in the economic development of their environment.

Get in contact with IASP, a consortium member of SpaceUp!

Link: <https://www.iasp.ws/>

²Source: <https://www.iasp.ws/Our-members/Directory>

5.2 HYPATIA CONSORTIUM

Name:	Hypatia
Territorial Area:	Italy
Technological Domain/Sector:	Chemistry and materials science, AM design, Design and commissioning of complex high voltage systems, Mechanical design of high vacuum systems, Start-up programs, Biocompatible structures, Technology transfer

Hypatia is a research consortium whose main objectives are the promotion, development and enhancement of the scientific, technological and human resources of the territory. The "Hypatia" project was born from the collaboration between university researchers, research institutes and companies to start and promote research projects aimed at sustainable development.

The Consortium Network acts as a collector between owners and producers of know-how and industrial organizations, paying particular attention to the issues of technology transfer and the encounter between research laboratories and production sites. The strength of the Hypatia project lies in creating shared spaces in which Research Institutes, University Departments and Companies work to find common interests and synergies, promoting technology transfer as a concrete method of growth by fostering collaboration between the scientific world and the industrial world.

The Consortium consists of companies specialized in the construction of equipment for the production of energy from renewable sources, in precision mechanics, in power electronics and microwaves, in energy storage systems, in the implementation of management and control software, in industrial automation systems, in power plants and others.

Hypatia carries out an interdisciplinary practice of research in materials science, through the development of prototypes in order to explore and demonstrate its functional properties, applications and technological perspectives.

The areas the Hypatia Consortium is acting in are:

- Chemistry and materials science
- AM design
- Design and commissioning of complex high voltage systems
- Mechanical design of high vacuum systems
- Start-up programs
- Biocompatible structures
- Technology transfer

Feel free to contact Hypatia, a member of the SpaceUp consortium.

Link: <https://www.consorziopazia.it/>

5.3 FRAUNHOFER SPACE

Name:	Fraunhofer Space
Territorial Area:	Germany
Technological Domain/Sector:	Communication and navigation, Materials and Processes, Energy and Electronics, Surfaces and optical systems, Protection technology and reliability, Sensors systems and analyses

Weather forecasts, navigation, real-time transmission for satellite TV or global Internet access – space industry applications and services have become an indispensable part of daily life, underpinning the importance of space technology for a modern industrialized society. In the Fraunhofer Space Alliance, the institutes pool their technological expertise in order to provide the industry and funding agencies such as the European Space Agency (ESA) and the European Commission with a central contact.

Fraunhofer acts as a systems provider, developing a wide range of top-quality components, integrating them into an overall system and delivering that system to the customer. The sheer technological variety of the participating institutes enables the Fraunhofer Space Alliance to offer its customers a unique range of services. Its business units are Communication and Navigation, Materials and Processes, Energy and Electronics, Surfaces and Optical Systems, Protection Technology and Reliability and Sensor Systems and Analysis.

The business units within the Fraunhofer Space Alliance are:

- Communication and navigation
- Materials and Processes
- Energy and Electronics
- Surfaces and optical systems
- Protection technology and reliability
- Sensors systems and analyses

Link: <https://www.space.fraunhofer.de/en.html>

5.4 LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY

Name:	Luxembourg Institute of Science and Technology
Territorial Area:	Luxembourg
Technological Domain/Sector:	Precision agriculture, Resource management and natural risks, High performance material, Space instrumentation

Luxembourg Institute of Science and Technology (LIST) is a Research and Technology Organization that develops technology-intensive solutions which focus on environmental innovation, advanced materials and digitalisation. Therefore, LIST transfers technologies to industrial partners from different sectors. Today, Luxembourg has over 30 space-related companies covering a wide range of different activities, such as technological development, the design and integration of micro-satellites, terrestrial infrastructure development, and support services.

Since 2005, Luxembourg has been a member of the European Space Agency (ESA) and is one of the largest financial contributors per capita, evidence of the government's willingness to invest strategically in the development of the space industry.

Smart Space's lines of business involve:

- Precision agriculture
- Resource management and natural risks
- High performance material
- Space instrumentation

The main partners of List are: ESA, NASA, Aurea Imaging, Airbus Defence and Space, CNES, Convis, Geoville, Luxspace, Cybercultus, Thales Aliena Space, Terra Sphere, HITEC Luxembourg, GVSE-Lux, Earth Lab, SES, Luxembourg Space Cluster, Green Vision, Telops-Canada, Aerovision BV.

Link: <https://www.list.lu/>

5.5 CENTRE FOR THE INDUSTRIAL TECHNOLOGY DEVELOPMENT

Name:	Centre for the Industrial Technology Development
Territorial Area:	Spain
Technological Domain/Sector:	n/a

The Centre for the Industrial Technology Development (CDTI) is a Spanish Public Business Entity, dependent on the Ministry of Science, Innovation and Universities, which promotes innovation and technological development of Spanish companies. It is the entity that channels requests for financing and support to R&D&I projects of Spanish companies in the national and international spheres. Therefore, the objective of the CDTI is to contribute to the improvement of the technological level of Spanish companies through the development of the following activities: technical-economic evaluation and financing of R&D projects developed by companies; management and promotion of Spanish participation in international cooperation programs; promotion of the international transfer of business technology and support services for technological innovation; support for the creation and consolidation of technology-based companies. CDTI is the official representative of Spain in the Space Council (ESA).

Activities: From 2006, the CDTI manages a budget line dedicated to the development of space projects in cooperation with other space agencies). The criteria for selecting such projects are similar to those used to establish priorities among the different programs that are developed within the framework of ESA. However, this new line of activity allows Spain to have a new tool to incentivize space activity that, in addition, offers particularly attractive conditions in terms of flexibility and speed in decision-making. In particular, in 2006, the CDTI has already signed Collaboration Agreements for the development of bilateral programs with the main world powers in the space sector:

- NASA (American space agency);
- Roskosmos (Russian space agency);
- CNES (French space agency);
- CSA (Canadian space agency)

Link: <https://www.cdti.es>

5.6 CENTRE OF EXCELLENCE SUPPORTED BY SATELLITE APPLICATIONS CATAPULT

Name:	Satellite Application Catapult
Territorial Area:	UK
Technological Domain/Sector:	Satellite Data

The Satellite Application Catapult's vision is to support industry and the science base across the UK to accelerate the growth of satellite applications to contribute to capturing a 10% share of the £ 400 Billion global space market predicted by 2030. The Regional Centres of Excellence support work with local communities to achieve this aim.

They create focal points of activity linking the science base with large industry and SMEs around the UK, to enable the development of applications and solutions, as well as to engage the wider end user market. The Centres of Excellence act as representatives and ambassadors for the Catapult in their local region.

The Catapult supported Centres of Excellence are located in five areas.

- [North East Centre of Excellence](#)
- [East Midlands Centre of Excellence](#)
- [South Coast Centre of Excellence](#)
- [South West Centre of Excellence](#)
- [Scottish Centre of Excellence](#)

Country involved: Great Britain

Activities: The Centres help businesses to exploit the use of satellite data, technology and applications to gain a competitive advantage in a global market, through: Incubation programmes; events; coaching; cross fertilisation.

Eligible applicants: Entrepreneurs and start-ups.

Link: <http://www.sacatapultcoe.org/about-us>

5.7 GERMAN AEROSPACE CENTRE

Name:	German Aerospace Center
Territorial Area:	Germany
Technological Domain/Sector:	Aerospace Technology

The German Aerospace Center (DLR) is the national aeronautics and space research centre of the Federal Republic of Germany. Its extensive research and development work in aeronautics, space, energy, transport, digitalisation and security is integrated into national and international cooperative ventures. In addition to its own research, as Germany's space agency, DLR has been given responsibility by the federal government for the planning and implementation of the German space programme. DLR is also the umbrella organisation for one of Germany's largest project management agencies.

DLR has approximately 8000 employees at 20 locations in Germany: Cologne (headquarters), Augsburg, Berlin, Bonn, Braunschweig, Bremen, Bremerhaven, Dresden, Goettingen, Hamburg, Jena, Juelich, Lampoldshausen, Neustrelitz, Oberpfaffenhofen, Oldenburg, Stade, Stuttgart, Trauen and Weilheim. DLR also has offices in Brussels, Paris, Tokyo and Washington D.C.

The National Contact Point (NCP) for Space is the helpdesk for all questions related to Horizon 2020 Space. It is part of the official EU network of NCPs. In Germany, these NCPs are established for the research topics within the EU Framework Programme and for some cross section activities. The German NCPs are coordinated by the EU Office of the Federal Ministry of Education and Research.

The NCP Space is acting for the Federal Ministry for Economic Affairs and Energy (BMWi). Since the start of the 6th Framework Programme in 2002, the NCP Space has been part of the Space Agency of the German Aerospace Center. Since the beginning of the 7th Framework Programme in 2007, the EU has been funding Space as an independent theme within the Specific Programme "Coordination".

Activities: The NCP Space at DLR offers information and support to all topics within the space theme to German industry, SMEs, research organisations, higher education institutions or other organisations.

Eligible actions: support to space-related SME, researchers and industry via German and EU funding; participation in ESA missions.

Links: www.dlr.de/en

https://www.dlr.de/rd/en/desktopdefault.aspx/tabid-2119/3050_read-4707/

5.8 NOSA THE NORWEGIAN SPACE AGENCY

Name:	Norwegian Space Agency
Territorial Area:	Norwegian
Technological Domain/Sector:	Aerospace Technology

The Norwegian Space Agency, former Norwegian Space Centre, is a government agency coordinating Norwegian space activities. The Norwegian Space Agency (NOSA) is a government agency under the Ministry of Trade, Industry and Fisheries. The Agency was established in 1987, as Norway became a member of the European Space Agency (ESA).

NOSA is responsible for organizing Norwegian space activities, particularly with respect to ESA and the EU, and for coordinating national space activities. In 2014, the total budget was NOK 879 million and NOSA currently has 39 employees.

In accordance with governmental guidelines and in co-operation with and to benefit Norwegian industry, research, public-sector bodies and Norwegian interest in general, the objectives of the Norwegian Space Agency are to:

- promote the development and coordination of Norwegian space activities, co-ordinate the Ministerial interests and needs within space activities,
- prepare proposals for integrated long-term programmes for Norwegian space activities and submit these to the Ministry of Trade, Industry and Fisheries,
- manage Norwegian Space Centre resources and efficiently distribute funding from the Norwegian State and other sources,
- mind Norwegian interests in liaison with space sector organizations in other countries as well as international organizations and contribute to
- coordinating Norwegian space activities with those elsewhere,
- facilitate the meeting of user needs in the space sector.

Activities: NOSA is responsible for organizing Norwegian space activities, particularly with respect to ESA and the EU, and for coordinating national space activities.

Eligible actions: Promote, Support, Prepare and Facilitate Norwegian space-related activities

Link: <https://www.romsenter.no/eng/>

5.9 ITALIAN SPACE AGENCY

Name:	Italian Space Agency
Territorial Area:	Italy
Technological Domain/Sector:	Aerospace Technology

The Italian Space Agency (ASI) was founded in 1988 with the purpose to coordinate Italy's investments in the space sector focusing in space science, satellite technologies and the development of mobile systems for exploring the Universe.

ASI led the Italian scientific community to successes within recent years in fields of astrophysics and cosmology, contributing among other things to reconstructing the first moments of life in the universe or making essential steps towards understanding the gamma-ray bursts phenomenon. ASI has contributed to space exploration by building scientific instruments that are aboard NASA and ESA probes bound for discovering the secrets of Mars, Jupiter and Saturn. In all of the major missions planned for future years-from Venus to the comets, up to the outer limits of our solar system-there will be a piece of Italy.

Activities: For example, COSMO-SkyMed, the jewel in the crown of ASI programmes, is aimed at improving our knowledge of the Earth. Italy through the work of ASI and the Italian industry pursues a tradition in the field of space propulsion research. In particular, ASI performs a leading role in the VEGA European programme, the small rocket fully designed in Italy.

Link: <https://www.asi.it/en>

5.10 RAL SPACE – SCIENCE & TECHNOLOGY FACILITIES COUNCIL

Name:	RAL Space
Territorial Area:	UK
Technological Domain/Sector:	Astronomy, Earth Observation, Atmospheric Sciences, Near-Earth Environment, Planetary Science, Solar Physics and Space Weather

RAL Space, Rutherford Appleton Laboratory, is a part of the Science and Technology Facilities Council ([STFC](#)) and was involved in over 210 spacecraft missions. Acting as the space hub for [UKRI](#) – the United Kingdom's Research and Innovation network, RAL Space is directly supporting UKRI's mission to create the best possible environment for research and innovation in the space industry of the UK.

RAL Space has gained over 50 years of expertise in space programs from leading concept studies for future missions, developing bespoke, innovative scientific instrumentation; providing space test and ground-based facilities; operating ground-stations to processing and analysing data. RAL Space is connected and working with the UK and overseas agencies, several universities and many industrial companies on space and ground-based space projects. The main actions of RAL Space in order to strengthen the UK's space industry are:

- scientific research
- technology development
- providing cutting edge facilities
- strategic advice to external partners

The facilities at RAL Space have been created to meet the comprehensive and exacting needs of customers and collaborators, provide capability for the needs of the next generation of spacecraft and instruments, and to contribute to the growing community of space focused businesses, capabilities and skills located at the Harwell Campus. The organisation is certified to ISO 9001:2015.

With involvements in over 210 space missions, RAL Space carries out a wide range of space-related research activities. The focus topics of research are:

- Astronomy
- Earth Observation and Atmospheric Sciences
- Near-Earth Environment
- Planetary Science
- Solar Physics and Space Weather

Link: <https://www.ralspace.stfc.ac.uk/Pages/home.aspx>

6 THE EIIP, VENTURE CAPITAL AND CAPITAL FUNDS FOR SPACE

Financing is often an important and worrying factor in the creation of businesses and the development of new technologies and business models. Access to finance is crucial for the success and growth of companies, in the earlier stages of start-ups and beyond.

This chapter will introduce you to several funding opportunities. The various financing options in this chapter consist of government support programmes, business angels, venture capital and crowdfunding. Incubators and accelerator programs can also be regarded as sources of finance, but are given a chapter of their own since financing is not the sole focus in incubator and accelerator programmes.

These are the most common opportunities to finance a start-up nowadays, alternatively, taking a loan at the bank is another, but archaic alternative.

6.1 EUROPEAN INVESTMENT PROJECT PORTAL

Name:	The European Investment Project Portal
Territorial Area:	Europe
Technological Domain/Sector:	n/a

The European Investment Project Portal (EIIP1) has been created by the European Commission (the "Site Manager") on the basis of Regulation (EU) 2015/1017 of the European Parliament and of the Council of 25 June 2015 on the European Fund for Strategic Investments, the European Investment Advisory Hub and the European Investment Project Portal and amending Regulations (EU) No 1291/2013 and (EU) No 1316/2013 – the European Fund for Strategic Investments [OJ L 169, 1.7.2015, p. 1; the "Regulation"].

The overall goal of the EIIP is to enable European Unions based companies, Start-ups and SMEs, in reaching potential investors worldwide. Therefore, the EIIP is connecting companies with investors. To get listed within the EIIP, you can add your project through the link below: <https://ec.europa.eu/eipp/desktop/en/index.html?2nd-language=en>

Eligible actions: All European Emerging Industries

Eligible applicants: European Companies/ Projects

Budget: Depends on the Investor

Link: <https://ec.europa.eu/eipp/desktop/en/index.html?2nd-language=en>

6.2 EUROPEAN BUSINESS ANGELS NETWORK

Name:	European Business Angels Network
Territorial Area:	Europe
Technological Domain/Sector:	n/a

The European Business Angels Network (EBAN) is the pan-European representative for the early-stage investment and seed-funding. EBAN gathers over 150 member organizations from over 50 countries. Established in 1999, EBAN is representing a sector estimated to invest 7.5 billion Euros a year.

Both in the scope of the H2020 EU Funded Projects and during our annual flagship events, EBAN provides a range of opportunities for early-stage entrepreneurs. This includes webinars, trainings, workshops, masterclasses, pitching competitions or one-to-one meetings, participating in these initiatives provides unequalled access to investors, start-up coaches and support to scale up a business. EBAN's activity is built on the following five pillars:

- Setting professional standards, training, and certification
- Benchmarking, research and networking with peers
- Lobbying
- Raising awareness and capacity building
- Cross-border syndication and co-investment support

EBAN Space aims to be a centre of the European space ecosystem and is run by a Committee of investors, entrepreneurs or other stakeholders within the space industry, to promote and advance Europe's ecosystem for entrepreneurship, innovation, and investment in the space sector.

EBAN is part of the SpaceUp consortium, reach out to us and get further information if required!

Link EBAN: <http://www.eban.org/>

Link EBAN space: <https://ebanspace.org/>

6.3 HIGHTECH GRÜNDER FONDS

Name:	High-Tech Gründerfonds
Territorial Area:	Germany
Technological Domain/Sector:	n/a

Founded in 2005, the High-Tech Gründerfonds (or HTGF) is a public-private venture capital investment firm based in Bonn, Germany. It is an early stage seed investor, focused on high potential high-tech start-ups. The seed financing is provided to allow start-ups to take their ideas through the prototyping phase up to the market launch. Usually it invests up to € 1 million in the seed stage and up to a total of € 3 million per Portfolio Company in later rounds.

High-Tech Gründerfonds is a public-private partnership. Investors include the Federal Ministry of Economics and Technology, the KfW Banking Group owned by the federal government, and 39 industrial groups (ALTANA, BASF, B.Braun, Robert Bosch, BÜFA, CEWE, Deutsche Post DHL, Dräger, Drillisch AG, EVONIK, EWE AG, Haniel, Hettich, Knäuf, Körber, LANXESS, media + more venture Beteiligungs GmbH & Co. KG, PHOENIX CONTACT, Postbank, QIAGEN, RWE Generation SE, SAP, Schufa, Schwarz Gruppe, STIHL, Thüga, Vector Informatik und WACKER). In March 2012, Evonik also invested € 2.5 million in the fund. High-Tech Gründerfonds has approximately 490 companies in its portfolio and has already financed close to 500 start-ups but so far only four related to Space.

Budget: High-Tech Gründerfonds has about € 886 million under management in different funds. They invest up to € 1 million in seed funding, reserve up to € 3 million in equity capital for your company in the traditional equity model or in the form of a convertible loan through the issue of shares and also invest abroad together with regional investors

Eligible applicants: The high-tech start-up must have been founded less than three years ago (entry in the German Commercial Register) and have previously obtained no more than € 500,000 in equity capital, silent partnerships or convertible loans from other investors. The company or an independent branch of it has to be domiciled in Germany.

Link: <https://high-tech-gruenderfonds.de/en/#title>

6.4 SPACESTARTERS

Name:	SpaceStarters
Territorial Area:	International
Technological Domain/Sector:	Aerospace Technology

SpaceStarters is a crowd-investing platform for companies and investors committed to the space industry. SpaceStarters gives a chance to get funding via crowd investing. With financial commitment, people can help to finance scientific high-technological projects with a social, ecological and economic purpose. Both start-ups and established companies can apply for placement on the SpaceStarters platform. The companies presented will be selected on the basis of a presentation of the business model by the company itself. Investors can choose between different investment profiles on SpaceStarters.

Once a campaign has been successfully concluded the contracts between the company and investors, the Company receives the invested amounts from the Bank that has received them on a fiduciary basis for the respective company. Companies and investors remain in contact; distributions are made in accordance with the contractual agreements.

Duration: Companies can apply anytime

Eligible actions: Satellite production and operation; satellite-based products and services; technology transfer from space; international Space Station ISS; space Exploration and beyond.

Eligible applicants: Start-ups and established companies who pursue an ambitious vision, with trendsetting ideas and products in the field of space, having a scalable business model.

Links <https://www.spacestarters.com/>

6.5 200 CROWD

Name:	200 Crowd
Territorial Area:	Italy
Technological Domain/Sector:	Finance, Information Technology, Digital Marketing

Crowdfunding, finance and marketing experts: at the service of innovation. 200 Crowd is the Equity Crowdfunding platform of Two Hundred that allows the meeting of entrepreneurs and investors. Thanks to a joint experience in Finance, Information Technology and Digital Marketing, companies and investors who come to 200 Crowds have at their disposal a competent Team and a wide range of Services.

200 Crowd collects funds from the community, customers, partners and thousands of retail investors. Demonstrate the potential of your business and turn your investors into your company's Ambassadors. Get in touch with the Lead Investor network.

In the event of a successful crowdfunding campaign, 6 % out of the total funds raised will be paid to 200 Crowds as the service fee. The 200 Crowd campaigns are all All-Or-Nothing; if the minimum goal is not reached, the investments are not unlocked and return to investors. No costs for you.

As two hundred is a part of the SpaceUp consortium, please reach out to us if you have any questions to a crowdfunding campaign on 200 crowds.

Link: <https://200crowd.com/crea-campagna-crowdfunding>

6.6 SPACE VENTURES

Name:	Space Ventures
Territorial Area:	International
Technological Domain/Sector:	n/a

Focusing on space technology, space ventures is investing in early-stage start-ups with a particular focus on space high-technology. Space Ventures are aiming at projects with technology-proven concepts and strong business models with fast positive cash flows.

They prefer new space technologies, downstream market space-enabled businesses on Earth and space technology transfer cases. All business models must be transferable to other countries, scalable to at least market niche leadership and be able to develop sustainable risk-adjusted returns.

Space Ventures is providing investment opportunities for financial and strategic investors who want to maintain control over the investments made and the equity invested. The Space Ventures Investors Club is not a closed fund and can be joined by new members at any time.

- Corporate Investors
- Family Offices
- HNWLs
- Business Angels (BA)
- BA Networks
- Venture Capital Investors
- Corporate Venture Funds

Eligible actions: Commercial products on Earth, satellite communication products and services, selected new space products and services, Earth observation and downstream market applications, ICT and Big Data for non-space industry, space tech transfer products and services.

Eligible applicants: Visionary projects which have: seed and early-stage, proven technology, scalable business model, space background, geographic footprint.

Links: <http://spaceventures.org/>

6.7 SPACETEC CAPITAL

Name:	SpaceTec Capital
Territorial Area:	Europe
Technological Domain/Sector:	Earth Observation, Navigations, Satellite Communications, Exploration and Situational Awareness, Geo-Information Security & Defence, Transportation & Aviation, Mobile & Mobility, Energy

SpaceTec Capital is the investment fond of SpaceTec Partners. SpaceTec Partners are a management boutique consultancy based in Munich, which is focusing on market development and innovations advisory within the European space industry. The area of expertise is space activities including:

- Earth Observation
- Navigations
- Satellite Communications
- Exploration and Situational Awareness
- Geo-Information
- Security & Defence
- Transportation & Aviation
- Mobile & Mobility
- Energy

SpaceTec Capital is investing in space-related disruptive technologies that are helping to address infrastructure challenges, transform economics in large industries and change the way the physical world operates and interacts.

Eligible actions: Investing and consulting in the Space-Tech Industry

Eligible applicants: space and space-derived technologies and applications

Link: <https://www.spacetec.partners>

6.8 SERAPHIM CAPITAL

Name:	Seraphim
Territorial Area:	UK
Technological Domain/Sector:	Aerospace Technology

Seraphim is investing in companies that are transforming industries and the technologies that are underpinning the space value chain. Seraphim's fast growing portfolio wants to transform the way global industries will operate. Seraphim's investment activity is focusing on all broader space related technologies that support the full ecosystem consisting of build, launch, data, downlink, and store, analyse and product. Seraphim is focusing on the following aspects for the investment decision:

- People - looking to back passionate entrepreneurs who usually have prior experience of start-ups, deep knowledge of the markets they are seeking to address and a demonstrable ability to recruit world-class talent.
- Product - game-changing products and services that are underpinned by proprietary, protectable technology and have already achieved some early customer traction.
- Market - opportunities that are solving major pain points in large directly addressable and well defined global markets.

Seraphim manages a £100m in Venture Capital. The newly launched, £70m, Seraphim Space Fund and Seraphim Capital, a £30m fund launched in 2006 which is currently in divestment. The fund focused on early-stage, generalist, and technology opportunities. The investments of Seraphim have typically built a product and achieved some early market validation, having high growth prospects. However, Seraphim will consider opportunities at seed stage and through to Series B.

Eligible actions: All space related technologies

Eligible applicants: early-stage, generalist, technology opportunities

Budget: Regularly: €1 to €3 m

Link: <https://seraphimcapital.co.uk/>

6.9 OHB VENTURE CAPITAL

Name:	OHB Venture
Territorial Area:	International
Technological Domain/Sector:	n/a

As a corporate venture capital company of OHB SE, OHB Venture capital invests worldwide in start-ups and companies that fit into the Group's strategy. Particular promising are those companies that cover the space systems, technologies, applications and services sectors with good market opportunities. In addition to the actual venture capital, they support their investments above all through targeted interaction with the OHB Group's extensive know-how and their extensive contacts in the research and development landscape. In addition, they actively help start-ups and companies in the areas of management and finance without overburdening them with the controlling and reporting methods common in large companies.

OHB Venture Capital's investment volume is generally between € 1 million and € 5 million, but may be higher in individual cases. OHB invests money in young start-ups with ground-breaking technology or applications in the space sector. All potential investments are characterized by attractive returns and a convincing business plan. In addition to a solid capital structure, qualified and highly committed start-up management is expected. Only if they are convinced of both - product and marketability – do, they decide in favour of investment.

OHB Venture Capital prefers to invest in companies that work on innovations in existing business areas of the OHB Group. The prerequisite for investment is:

- A qualified and highly committed management team
- "Proof of Concept" of the Innovation
- A promising business model
- Consistent market and customer orientation
- Interest in cooperation with OHB

Eligible actions: Satellite technology from the component to the complete subsystem; rocket technology; manned and unmanned missions for exploration of the planetary system and others.

Eligible applicants: Companies having a qualified and highly committed management team; a promising business model; consistent market and customer orientation; interest in cooperation with OHB; "Proof of Concept" of the innovation.

Link: <https://www.ohb-vc.de/>

6.10 COSMICAPITAL

Name:	CosmiCapital
Territorial Area:	Europe
Technological Domain/Sector:	Space-related Technologies

CosmiCapital is a space-tech venture fund managed by a company specialized in early-stage Tech investments in France and Europe called CapDecisif Management. The CosmiCapital fund is supported and sponsored by CNES. The international team behind this fund is coming from space-related backgrounds with solid hands-on experiences and capabilities. The CNES is an important strategic supporter of the CosmiCapital fund providing due diligence access, networks and contacts as well as technological resources.

Already 2.5 billion dollars are invested in start-ups in 2017 and the diverse portfolio is focusing on:

- Launcher Manufacturing
- Satellite Manufacturing
- Systems & Technologies
- Ground Services
- Data from Space

Eligible actions: Space-Related Businesses

Eligible applicants: Start-ups in the Seed, Series A-B-C and Growth Capital investment stage

Budget: Regularly: €1 to €10 m; €20 to €25 m for diversified breakthrough companies

Link: <https://www.ohb-vc.de/>

6.11 PRACTICA CAPITAL

Name:	Practica Capital
Territorial Area:	Baltic Region
Technological Domain/Sector:	n/a

Practica Capital is a venture capital founded in 2011 which is investing in high-tech companies from the Baltic region. The investment is between €200k to €2m+ per investment and Practica Capital is investing in seed, early and select growth-stage ventures.

Three funds in two generations with €46m (€64m target by end-2019) under management after the €22m first close of the latest Practica Venture Capital II fund at the end of 2018 with Invega (advised by the EBRD during process), the team and a number of other local and international investors targeting €40m (€50m hard cap) in total commitments at the final closing in 2019. Our earlier 2012 vintage funds, €8m Practica Seed Capital and €16m Practica Venture Capital I, were raised from the European Investment Fund (EIF), the team and a number of local investors.

Invega and EIF are co-investors from Practica Capital through their managed funds of funds, established by the Ministry of Economy, the Ministry of Finance of the Republic of Lithuania and financed by the EU Funds.

Eligible actions: tech related

Eligible applicants: growth, series A and seed-stage start-ups in tech

Budget: € 200k to € 2m+

Link: <https://practica.vc>

6.12 NEWABLE

Name:	Newable
Territorial Area:	International
Technological Domain/Sector:	Deep Tech, Med Tech, AI, Space, Robotics and 4IR

Newable private investing was established in 1982 with the name “London Business Angels” (LBA). Newable has developed an ecosystem for investing in knowledge-intensive companies in Deep Tech, Med Tech, AI, Space, Robotics and 4IR.

Newable is following different funding solutions which are

- Mortgages
- Property Finance
- Business Loans
- Funding for Buy-Outs
- Early Stage Equity
- Newable Private Investing

Eligible actions: Investing in the Deep Tech Industry

Eligible applicants: Med Tech, AI, Space, Robotics and 4IR startups

Link: <https://newable.co.uk/money/>

6.13 INNOVA VENTURE BY LAZIO INNOVA

Name:	INNOVA Venture by Lazio Innova
Territorial Area:	Italy and other European Countries
Technological Domain/Sector:	n/a

INNOVA Venture is the regional fund managed by Lazio Innova which, taking up and innovating the good practices of the previous POR I.3 Fund, invests directly in the risk capital of the Lazio's companies. The transactions will be carried out together with private and independent co-investors with respect to the target companies. To develop the venture capital offer in Lazio for investments in the risk capital of start-ups and SMEs located, or wishing to locate, in the Lazio region with a leverage effect on the capital of private co-investors, also through authorized equity crowdfunding platforms.

The objective of INNOVA Venture is to increase the supply of risk capital to start-ups and SMEs located in, or intending to locate, in the Lazio region with a leverage effect on the capital of private co-investors and an impact on the real economy of the region.

The presentation of the investment proposals must take place exclusively by certified e-mail, after completing on the GeCoWEB platform (www.lazioinnova.it/gecoweb) the appropriate form for INNOVA Venture present therein. The affiliated platforms will be included in the online list relating to the INNOVA Venture fund, which will be updated including the platforms that will gradually be agreed upon and which will be the only ones to which the interested companies will be able to turn to support them in the structuring of and equity crowdfunding tranche to be proposed in association with the fund's investment.

Duration: September 2018 – April 2023.

Eligible countries: Italy and European countries.

Eligible actions: Early, seed and development stage investments.

Eligible sectors: All (subject to limited specific exclusions).

Budget: € 20M. Initial co-investment per company: minimum 350,000 euros and maximum 2 M€ (sum of INNOVA Venture's share and the obligatory one of the co-investors).

Eligible applicants: Start-ups, SMEs, companies located, or wishing to locate, in the Lazio region.

Link: <http://www.lazioinnova.it/innova-venture>

7 THANK YOU FOR READING!


On behalf of SpaceUp and its consortium members, we wish you and your business all the best on the way into space!


SME4SPACE





www.space-academy.eu

 @SpaceUpProject

 www.linkedin.com/company/spaceupeu/

