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- Visegrad Fund
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Space for V4

Supporting space innovations
and space economy in the
Visegrad countries



The project is co-financed by the Governments of Czechia, Hungary, Poland and Slovakia through Visegrad Grants from the International Visegrad Fund. The mission of the fund is to advance ideas for sustainable regional cooperation in Central Europe.

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Introduction

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Space for V4 project

This project brings together partners from Hungary, Poland, the Czech Republic, and Slovakia to showcase how regional cooperation can drive innovation and growth in the space sector. This publication presents best practices, case studies, and policy insights from across the V4, highlighting national strengths while outlining opportunities for joint action. It demonstrates that by working together and engaging with the European Space Agency, the Visegrad countries can build a competitive and resilient space economy that benefits the region and contributes to Europe's collective ambitions.

Purpose of the Publication

The publication is one of the central outputs of the project *Space for V4: Supporting space innovations and space economy in the Visegrad countries (ID 22420295)*, funded by the International Visegrad Fund. Its aim is simple yet ambitious: to document and share the best practices, case studies, and lessons learned from across the V4 countries and beyond, and to turn these insights into practical inspiration for policymakers, entrepreneurs, educators, and the public.

At its heart, the project recognises that space is no longer the exclusive domain of a few advanced economies. Across Central Europe, new actors are emerging with the ambition to participate in international supply chains, to commercialise novel technologies, and to engage with European institutions such as the European Space Agency (ESA). Yet, progress in space is rarely achieved in isolation. It requires scale, coordination, and long-term commitment. This joint publication therefore serves as a bridge: between national ecosystems and the broader European framework, between emerging talent and established institutions, and between V4 innovation and global opportunity.

Importance of Regional Cooperation in the V4 for Space Industry Growth

The space sector is a domain where scale and specialisation are critical. Few countries can succeed alone due to high technological and financial barriers. Regional collaboration provides economies of scale, shared infrastructure, and joint participation in ESA programmes.

For the V4, Slovakia, Czech Republic, Poland, and Hungary, cooperation creates opportunities to pool fragmented ecosystems into a cohesive regional market and to leverage complementary strengths. Czechia has strong mechanical engineering, Poland is advancing rapidly in Earth observation and launch technologies, Hungary has developed acceleration know-how, while Slovakia has notable capabilities in ICT, Earth observation, and small satellite integration. By sharing risks, reducing duplication of effort, and presenting a common front in EU and ESA discussions, the V4 can accelerate its growth well beyond what would be possible individually.

The V4 countries already function as a recognised political and economic bloc in the European Union. Extending this cooperation into the space sector offers stronger negotiating positions within ESA Councils, better access to EU research and innovation funding (Horizon Europe, European Defence Fund, CASSINI, etc.), and a platform for common training and talent development. For startups and SMEs, cross-border collaboration means early exposure to international supply chains, partnerships, and funding opportunities, crucial ingredients for long-term global competitiveness.



Source: contains modified Copernicus Sentinel data (2024), processed by ESA

The Role of ESA in Enabling Global Competitiveness

ESA acts as Europe's anchor of competitiveness in space. Its programmes provide co-funded R&D contracts, technical expertise, and business incubation through the ESA BIC network. It also supports technology transfer via ESA Brokers and Spark Funding, and enables participation in flagship missions such as JUICE, Hera, Galileo, Copernicus, and Artemis collaborations.

Membership in ESA transforms national industries by validating technologies for global markets, attracting private investment through the credibility of ESA partnerships, and accelerating innovation through cooperation with Europe's top research and industrial actors. The impact is visible across the V4. The Czech Republic, Poland, and Hungary, all ESA members, have established ESA BICs that nurture dozens of startups and have positioned their industries in European supply chains. Poland now counts nearly 400 entities active in the space sector, with over 150 engaged in ESA projects. Czech companies supply components to flagship ESA missions, while Hungarian startups have built strong international connections through ESA-backed acceleration.

Slovakia, which became an ESA Associate Member in 2022, stands at the threshold of a similar transformation. Its engagement with ESA programmes is growing, but it still lacks one of the most effective entry points for startups: an ESA Business Incubation Centre.

Slovakia's Ambition to Initiate ESA BIC and Share Early Steps

Slovakia's space industry has expanded rapidly. More than fifty companies are already active in the sector, generating cumulative revenues of over €115 million and employing more than 500 people. Despite these successes, Slovakia remained the only V4 country without an ESA BIC.

This gap has now been successfully addressed. In February 2025, ESA launched a call for the establishment of an ESA BIC in Slovakia, and the Slovak bid was officially accepted. From 1 September 2025, ESA BIC Slovakia is operational, making Slovakia the last V4 country to join the ESA BIC network. Its first activities will be published later in 2025. The ambition is clear: to provide a structured framework for supporting startups, linking them with ESA experts, and co-funding the commercialisation of their technologies. ESA BIC Slovakia will serve not only as a national platform but also as a hub connecting innovators across Central Europe.

Inspiration is drawn from V4 neighbours. Czechia's challenge-driven Makerspace model demonstrates how low-threshold programmes can attract new actors to ESA. Poland's dual BIC hubs in Warsaw and Rzeszów show the importance of scale and regional reach. Hungary's integration of ESA BIC with broader acceleration initiatives highlights the value of connecting space startups with mainstream innovation networks.

Slovakia has already been preparing for this step. The Slovak Space Office, SARIO, Inovato Cluster, and other stakeholders engaged in consultations, co-funding arrangements, and awareness-raising campaigns. Ecosystem events such as VýťahConf, Emerging Space, and the European Space Ecosystem Integration Summit mobilised talent and generated momentum. With the successful launch of ESA BIC Slovakia, these preparatory efforts have now borne fruit, marking the country's full integration into the European space innovation ecosystem and confirming its readiness to join its V4 partners in making the most of ESA membership.



**Overview
of the European
Space Ecosystem
02**



Intro

Europe's space ecosystem is built on decades of cooperation, technological excellence, and shared ambition. At its centre stands the European Space Agency (ESA), which provides the framework for member states to pool resources, develop advanced missions, and strengthen Europe's strategic autonomy. Through ESA, European nations gain access to large-scale programmes in science, Earth observation, navigation, telecommunications, and space safety. For the V4 countries, participation in ESA has proven transformative, opening pathways to global supply chains, new investment, and international recognition.

ESA Programmes and Their Impact on Member Countries

The European Space Agency (ESA) is the cornerstone of Europe's space policy and industry. Since its founding in 1975, ESA has become a global leader in science, exploration, Earth observation, navigation, and commercialisation. Its mission goes far beyond sending spacecraft into orbit: ESA exists to strengthen Europe's technological autonomy, drive innovation, and create economic growth through space.

ESA's programmes are divided into mandatory contributions, to which all member states participate, and optional programmes, which allow countries to choose their level of involvement. These optional programmes cover Earth Observation (FutureEO), telecommunications through ARTES, navigation via NAVISP, space safety (S2P), and technology development under the General Support Technology Programme (GSTP). Through them, ESA creates structured opportunities for national industries to grow, universities to participate in international research, and startups to connect with investors and markets.

Membership has consistently proven to be transformative. Industrial competitiveness improves when ESA contracts validate national technologies for global markets. Universities and research institutions gain new pathways into international missions, from fundamental science projects such as JUICE or BepiColombo to applied technology development. Entrepreneurship is supported through ESA Business Incubation Centres, which offer young companies technical mentoring, access to funding, and integration into European supply chains. Perhaps most importantly, participation in ESA strengthens Europe's strategic autonomy by ensuring that essential capacities in Earth observation, navigation, and secure communication remain under European control.

The impact can already be seen across Central Europe. The Czech Republic, Poland, and Hungary, which all joined ESA in the past two decades, have successfully established their own ESA BICs and used them to stimulate thriving startup ecosystems. Slovakia, by comparison, is a relative newcomer: as an ESA Associate Member since 2022, it is beginning to follow the same trajectory by joining four optional programmes and preparing to host its own ESA BIC.

Opportunities and Current Gaps in the V4 Region

Over the past decade, the Visegrad Four countries have made notable progress in building their space sectors, each developing its own strengths. The Czech Republic is recognised for precision engineering, satellite components, and mission operations software. Poland has invested heavily in Earth observation satellites and CubeSat platforms, while also advancing launch technologies. Hungary has built strong expertise in acceleration, Earth observation, dosimetry, and small satellite development. Slovakia, though newer to the field, has carved out a niche in ICT, Earth observation services, and CubeSat integration.

Despite these achievements, obstacles still slow the region's development. The most pressing is fragmentation: many initiatives remain confined to national boundaries, and opportunities for cross-border collaboration are missed. Venture capital and private investment are scarce compared to Western Europe, making it difficult for companies to scale. Policy frameworks are uneven, and not all V4 states have strategies or space legislation aligned with European priorities. Commercialisation is also a challenge, with many startups and research groups struggling to move beyond prototypes into sustainable businesses. Finally, the V4 lacks a

unified voice within ESA and EU discussions, reducing its ability to influence major funding and strategic decisions.

The Space for V4 project was created to address some of these shortcomings by mapping ecosystems, offering training in ESA procedures, and drafting a shared roadmap. But for the region to realise its full potential, a deeper commitment will be needed: joint investments, stronger public-private partnerships, and harmonised policies that support long-term growth.

The Untapped Potential in Slovakia

Slovakia offers a striking example of both rapid progress and untapped potential. In just over a decade, the country has gone from having almost no recognised space industry to supporting more than fifty companies engaged in space-related activities. Together, these firms report cumulative revenues exceeding €115 million and employ more than 500 people. While part of this includes non-space portfolios, most revenue comes from space-based activities, especially in downstream fields such as Earth observation, navigation, and ICT. This dual character reflects how Slovakia's space economy has grown out of its ICT, engineering, and industrial foundations.

Key achievements illustrate this trajectory. The GRBAAlpha nanosatellite, developed with international partners, became the first CubeSat capable of detecting gamma-ray bursts. Needronix supplies components used on multiple missions, while CTRL has emerged as Slovakia's leading ESA contractor in space hardware. Spacemanic expands as a CubeSat integrator, offering end-to-end missions. Astros Solutions contributes to ESA's Space Safety Programme, KAJO delivers Horizon Europe projects in geospatial services, and M2M Solutions develops supply chain and Industry 4.0 applications. MicroStep-MIS is established in meteorological monitoring and forecasting, while downstream champions like Solargis and Sygic have built international reputations in renewable energy forecasting and navigation software.

Academia reinforces this base. The Slovak Academy of Sciences, the Technical University of Košice, and the Slovak University of Technology in Bratislava contribute to ESA missions while educating the next generation of engineers, ensuring the sector develops both technology and talent.

Slovakia became an ESA Associate Member in 2022, joining optional programmes in Earth Observation, GSTP, Space Safety, and Commercialisation. These already enable Slovak actors to integrate into European supply chains. At the same time, Slovakia adopted its first comprehensive Slovak Space Strategy 2030+, setting goals in research, services, industry development, security, and outreach.

A milestone came in 2025 with the launch of ESA BIC Slovakia. Operational since 1 September 2025, the incubator provides startups with structured support, ESA branding, and international visibility. This closes a long-standing gap, aligning Slovakia with its V4 neighbours, all of which now host ESA BICs. Challenges remain: investment and private capital are still limited, and institutional capacities continue to grow. Yet Slovakia's location, ICT expertise, and industrial base, combined with the new incubation framework, give it strong potential. With ESA BIC Slovakia in place, the country is positioned to become a regional hub for downstream applications and innovative NewSpace services.



**National Contributions:
Best Practices
& Case Studies**

03



Intro

The Visegrad Four countries share a common history and geography, yet each has followed its own path in developing space capabilities. Together, they offer a rich spectrum of best practices that highlight how different strategies can contribute to a stronger regional ecosystem. From Hungary's acceleration and human spaceflight momentum, through Czechia's industrial precision and innovation tools, to Poland's full-spectrum value chain and Slovakia's rapid rise in downstream and ICT-driven services, the V4 demonstrates how diverse approaches can be combined into a competitive and resilient European space economy.

Hungary: Best Practices & Case Studies

Hungary's space sector has grown rapidly over the past decade, evolving from a relatively modest scientific contributor into a dynamic ecosystem of startups, research institutes, and industrial players. The country's formal entry into the European Space Agency (ESA) in 2015 marked the start of this transformation, but the recent HUNOR (Hungarian to Orbit) astronaut programme has given it a powerful new boost. This flagship initiative has not only brought global visibility to Hungarian space ambitions—through the flight of the country's second astronaut, Tibor Kapu, on Axiom-4—but also catalysed investment, education, and entrepreneurship across the industry.



Source: Design Terminal

Hungary's trajectory illustrates how smaller nations can strategically leverage international partnerships, targeted national programmes, and entrepreneurial ecosystems to carve out a competitive role in Europe's space economy. The Hungarian model combines a strong tradition in mathematics and applied sciences with emerging strengths in downstream services, small satellites, and agile startups.

One of the strongest catalysts of this transformation has been the HUNOR programme. Beyond the symbolic milestone of sending Tibor Kapu to the International Space Station, the mission became a showcase for Hungarian scientific and technological innovation. Twenty-three experiments—spanning space medicine, materials science, physics, biotechnology, and Earth observation—were carried aboard Axiom-4. They highlighted not only the diversity of Hungary's research capacity but also the collaborative spirit between universities, SMEs, and research institutes. Projects ranged from space health and physiology, such as Semmelweis University's work on heart muscle cells and the University of Szeged's DNA-repair studies, to applied technologies, like ADMATIS's experiments with lunar regolith-based building materials or Aedus Space's microgravity medicine tester. High-tech SMEs such as 27G-Technology contributed advanced dosimetry hardware, while academic groups from Eötvös Loránd University and the University of Debrecen explored topics from Saturn's cloud dynamics to vascular ultrasound imaging. This broad portfolio exemplified Hungary's cross-disciplinary approach: rather than focusing narrowly on a single domain, the country mobilised a wide array of institutions to maximise learning and visibility.

Crucially, HUNOR is also linked directly to the education system. Universities involved in astronaut-related research have integrated findings into curricula, feeding into programmes like UniSpace Hungary, the national postgraduate space education consortium. This ensures that the scientific momentum of human spaceflight translates into long-term capacity building for the Hungarian workforce.

Alongside this scientific momentum, several Hungarian companies have moved into the spotlight as industrial anchors of the ecosystem. REMRED Ltd. is developing the REMTECH Centre, a satellite manufacturing and testing facility for spacecraft up to 400 kg, with operations planned from 2026. Backed by a €25 million investment from 4iG Space & Technology, it signals Hungary's ambition to build end-to-end satellite integration capabilities on home soil. 4iG Space & Defence Technologies launched the HUSAT initiative, aiming to deploy a Hungarian-owned constellation of one geostationary and eight LEO satellites by 2032. The company has signed agreements with Axiom Space on orbital data centres and satellite servicing, with CPI Vertex on ground station infrastructure, and with OKAPI:Orbits to integrate space traffic management. C3S Kft., a pioneer in Hungarian small satellite technology, successfully launched its 3U CubeSat VIREO in 2023 with onboard AI processing. In 2024, it won the national Industry Innovation Award for its 6U drought-monitoring CubeSat WREN-1 and demonstrated integration of a 16U platform for Blue Skies Space under ESA's NAVISP programme. 27G-Technology Ltd. has established itself as a leader in space radiation monitoring. Its RadNano Infinity dosimeters flew on the ISS in 2025, have been selected for lunar missions, and are already in orbit aboard WREN-1. Recognition in Hungary's Top 100 Energy and Climate Innovations underscores its relevance to both space and terrestrial applications. Puli Space Technologies, one of the most internationally recognised Hungarian ventures, developed the Puli Lunar Water Snooper, a compact neutron spectrometer that flew aboard Intuitive Machines' IM-2 mission in 2025. Despite the short operational window, the instrument returned valuable lunar water data, marking Hungary's contribution to ESA's first commercial lunar data purchase. Other niche players, such as BHE Electronics in satellite communications, Ephemersys in mission planning software, and Motion Products in Earth observation-based infrastructure monitoring, showcase Hungary's ability to innovate across the space value chain—from upstream hardware to downstream analytics.

This industrial progress has been accompanied by a wave of entrepreneurial ventures supported through ESA BIC Hungary and local accelerators. Startups such as StarGrip, which develops gesture recognition interfaces for astronauts, and SpaceABC, which works on personalised astronaut nutrition based on nutrigenetics, illustrate Hungary's creativity in human-centred applications. Others, such as Motion Products, apply Earth observation data for infrastructure resilience, while Ephemersys provides specialised software tools for CubeSat designers.

The role of Design Terminal, which operates ESA BIC Hungary as well as serving as Hungary's Technology Broker and ESERO provider, is crucial in sustaining this wave of entrepreneurship. By embedding space startups into Hungary's broader innovation landscape—rather than treating them as a standalone niche—the incubator provides access to cross-sector expertise, mentors, and funding networks. Startups benefit not only from ESA branding but also from exposure to Hungary's strong life sciences, IT, and engineering sectors, leading to innovations that can scale into the small satellite sector and beyond.

Taken together, these developments show how Hungary has transformed itself into a visible and ambitious space actor in just a decade. The combination of human spaceflight momentum, industrial leaders, innovative startups, and strong support structures illustrates a model that other V4 countries can learn from: smaller nations can achieve significant impact by combining international partnerships, targeted programmes, and an open innovation ecosystem that integrates space into the broader economy.

Czech Republic – Innovation agency JIC

The Czech Republic views space as a strategic sector with direct implications for its economy, security, science, and technological competitiveness. This approach is embedded in the National Space Plan 2020–2025, which emphasises stronger collaboration between academia and industry, the development of innovation capabilities, and active participation in European and international programmes. Czechia has been a member of ESA since 2008 and has built a reputation as a reliable contributor to ESA missions, EU space initiatives such as Copernicus and Galileo, and commercial space projects.

One of the Czech Republic's key strengths lies in its industrial base, which supplies high-precision mechanical systems, electronics, and specialised materials to ESA and leading aerospace primes. Companies such as OHB Czechspace, Frentech Aerospace, and 5M are recognised partners for structures, mechanisms, and composite materials. Others, like ADVACAM, have developed miniaturised radiation detectors used on the International Space Station, NASA's Orion spacecraft, and the Gateway project. ATC Space contributes to Ariane 6 by producing aluminium skirt structures, while SAB Aerospace delivers satellite dispensers for the Vega launcher.

Czech innovation also extends to the rapidly growing small satellite and CubeSat domain. Companies such as Spacemanic and TRL Space Systems provide end-to-end mission development, from design and integration to operations and constellation deployment. These activities not only strengthen the industrial base but also create opportunities for students and young engineers to gain hands-on experience, as shown by missions like VZLUSAT, GRBAAlpha, or BDSat.

The downstream sector is equally vibrant. Firms including World from Space, Gisat, and UpVision deliver Earth observation services for agriculture, urban management, and environmental monitoring. Their work highlights the growing demand for applications based on Copernicus data and the importance of connecting satellite data to societal needs such as climate adaptation and urban resilience.

Beyond individual company successes, the Czech Republic has also pioneered innovative support instruments for early-stage space entrepreneurs, researchers and university teams. In addition to operating ESA BIC, the country has introduced complementary tools that target very early-stage ideas and help new actors prepare for incubation or larger ESA programmes. A flagship example is the ESA Spectrum Sharing Makerspace, coordinated by the innovation agency JIC in Brno and the Faculty of Electrical Engineering and Communication, Brno University of Technology (FEEC BUT) in collaboration with ESA and the Czech Ministry of



Transport. Unlike traditional ESA programmes, which often cater to established organisations, the Makerspace provides a low-barrier entry point for startups, student teams, and researchers. It offers targeted support for validating new technologies in radio-frequency spectrum sharing, an area that is increasingly critical with the rise of satellite constellations, IoT applications, and autonomous systems.

The Makerspace operates through structured open calls, combining challenge-driven topics with opportunities for open proposals. Selected teams receive up to €50,000 for a six- to twelve-month prototyping period, along with mentoring and access to laboratory facilities. Projects are evaluated transparently by a board of ESA experts, national authorities, and industry representatives. The programme has already supported innovative concepts such as CubeSat-compatible transceivers, aerial communication relays, AI-driven spectrum allocation, and reconfigurable antennas based on metasurfaces. Several of these projects have advanced from proof-of-concept to pre-commercial stages, with clear potential for both civil and dual-use applications.

The Czech experience demonstrates how a flexible and fast-track instrument can complement traditional ESA support mechanisms and lower the entry barriers for newcomers. By doing so, it broadens participation in the space sector and ensures that innovation comes not only from established primes but also from universities, research groups, and early-stage companies. The Makerspace model is now regarded as highly transferable and could serve as a blueprint for similar initiatives elsewhere in the V4 region.

In conclusion, the Czech Republic contributes to the V4 space ecosystem through both its strong industrial supply chain and its innovative ecosystem-building instruments. From precision engineering and advanced materials to small satellite missions and downstream analytics, Czech actors are deeply embedded in European space activities. The JIC-led Makerspace stands out as a best practice, showing how national agencies can design programmes that align with ESA priorities while remaining accessible to local innovators. Together, these elements make Czechia not only a supplier of high-quality technologies but also a model of how to nurture and integrate new actors into Europe's expanding space economy.

Poland – ABGi Poland

Poland's journey into the European space economy illustrates how rapid transformation is possible once a country becomes fully integrated into ESA structures. Although Polish institutions had been cooperating with ESA through individual projects since the 1990s, this collaboration became formalised with the signing of the Plan for European Cooperating States in 2007, paving the way for full membership in 2012. Over the past decade, Poland has become one of Central Europe's most dynamic space actors, with nearly 400 entities active in the sector, around 150 of which have already participated in ESA projects.

Poland's space industry today covers the entire value chain. At the upstream level, companies such as Creotech Instruments and SatRevolution are leading manufacturers of satellites and satellite platforms. Creotech's EagleEye satellite is a flagship mission demonstrating national competence in optical observation, while its planned CAMILA constellation will extend these capabilities to Earth monitoring on a larger scale. SatRevolution has pioneered nanosatellite missions, including the Światowid CubeSat, and continues to expand internationally through

commercial partnerships. Equally impressive is KP Labs, which developed the Intuition-1 CubeSat featuring one of the world's most advanced onboard artificial intelligence payloads, capable of analysing Earth observation data directly in orbit.

The launch segment has also seen progress. Institutes such as the Łukasiewicz Research Network – Institute of Aviation have developed the ILR-33 Bursztyn, an eco-hybrid sounding rocket, while the private company SpaceForest is testing its Perun suborbital launcher. These projects underline Poland's ambition not only to build satellites but also to ensure access to space on competitive terms.

Polish companies are also strongly present in ESA science and exploration missions. They have contributed components and subsystems to JUICE, Hera, and Proba-3, securing a place in high-profile international consortia. In parallel, the National Satellite Information System (NSIS) platform has strengthened national downstream applications by providing easy access to Copernicus and other EO data for public administration and businesses.

What makes Poland particularly distinctive within the V4 context is its comprehensive network of incubators, clusters, and accelerators. The establishment of ESA BIC Poland in 2022, with hubs in Warsaw and Rzeszów, has created a structured entry point for startups. The incubator aims to support at least 35 companies in its first five years, offering them technical mentoring, financial support, and international visibility. This is complemented by ABGi Poland, which operates as the ESA Technology Broker and Spark Funding coordinator in Poland. Through these instruments, technology developed in non-space sectors is transferred into the space economy, while startups and SMEs receive grants to accelerate commercialisation.



The innovation pipeline is further strengthened by initiatives such as Space3ac, one of Europe's leading accelerators focusing on space applications, as well as PCI DeepTech and the ABGi Poland SpaceHUB community, which provide regular networking opportunities. Organisations such as the Polish Space Industry Association (ZPSK), Polish Space Professionals Association (PSPA), clusters like the Polish Space Technology Cluster (PSTC), Aviation Valley, and others not only link SMEs and universities with large integrators but also strengthen cross-sectoral cooperation, foster innovation ecosystems, and enhance Poland's visibility within European space value chains.

Education and outreach have also become integral to the ecosystem. The ESERO-Polska programme, hosted at the Copernicus Science Centre in Warsaw, brings space education into schools, while CASSINI space camps and the SpaceUp Poland initiative engage students and early-stage entrepreneurs. Notably, Poland is preparing to send a new astronaut to the International Space Station in 2025 as part of the Ignis mission, a powerful symbol of the country's integration into the European and global space community.

The Polish case demonstrates the effectiveness of a multi-layered strategy: combining a strong upstream industry with downstream services, investing in launch capabilities, and building an innovation pipeline from education to accelerators and incubators. ESA membership has been the catalyst, but national institutions, clusters, and companies have seized the opportunity with remarkable speed.

Poland's best practices are highly relevant to its V4 partners. The integration of ESA tools, from BICs and Brokers to Spark funding, with national accelerators has created a seamless support system for startups. By covering the full spectrum from research and education to satellites, rockets, and applications, Poland has positioned itself as the most complete space ecosystem in the V4. Its experience shows that with a critical mass of actors, proactive use of ESA programmes, and targeted support for entrepreneurs, even a newcomer to ESA can rapidly become a significant contributor to Europe's collective space ambitions. And this is just an example of some of the activities carried out in Poland within the space sector.

Slovakia - a growing ecosystem

Slovakia is one of the youngest space economies in Europe, yet in recent years it has emerged as a fast-growing and internationally recognised ecosystem. Its roots go back to the Czechoslovak space era, from the first hardware contributions in the 1970s to astronaut Ivan Bella's mission to Mir in 1999, but the real momentum came after 2015 with the establishment of a dedicated governance structure. The decisive step was taken in 2021 with the creation of the Slovak Space Office, a joint project of the Ministry of Education, Research, Development and Youth and the Slovak Investment and Trade Development Agency (SARIO). Today, this office is the primary driver of national space policy and industrial development.

The Slovak Space Office is organised into two branches: the Policy Department, led by the Ministry of Education, and the Industry Department, operated by SARIO. Together, they coordinate Slovakia's participation in ESA, EU, and UN initiatives, while also supporting the growth of domestic companies and research institutions. Since Slovakia became an ESA Associate Member in October 2022, the Office has been instrumental in helping local actors access optional programmes in Earth Observation, Space Safety, technology development, and Commercialisation. It also plays a vital role in outreach, talent development, and the organisation of flagship events such as Emerging Space and the European Space Ecosystem Integration Summit, both of which bring international attention to Bratislava.

The Slovak industry has grown rapidly under this framework. More than fifty companies are now active in the sector, employing over 500 professionals and generating more than €115 million in cumulative revenue across both space and non-space activities, with the majority linked to the space economy. Among them are firms producing CubeSat components exported worldwide, developers of advanced sensors and actuators, and integrators of complete nanosatellite missions such as GRBAAlpha, the first CubeSat capable of detecting gamma-ray

bursts. The ecosystem also includes operators of global ground station networks, providers of solar energy forecasting tools, and software companies offering some of the most downloaded navigation applications worldwide. Blockchain-based supply-chain solutions and AI-driven analytics further expand the portfolio, reflecting Slovakia's strengths in information and communication technologies.

Academic partners complement this industrial base. The Slovak Academy of Sciences contributes to ESA science missions such as Rosetta and JUICE, while the Technical University of Košice and the Slovak University of Technology in Bratislava offer dedicated space engineering programmes and CubeSat projects. This combination of industrial capability and research excellence creates the conditions for sustainable growth, but it is the Slovak Space Office that provides the strategic direction and international integration.

The adoption of the Slovak Space Strategy 2030+ in 2024 further underlines this trajectory. It sets goals across research, services, industry, security, and outreach, and explicitly positions the Slovak Space Office as the coordinator of implementation. A milestone was reached in 2025 with the acceptance of Slovakia's bid for an ESA BIC. Since 1 September 2025, ESA BIC Slovakia has been operational, completing the V4 BIC network and creating a structured entry point for Slovak startups into the European innovation ecosystem.

The year 2025 also marked a significant leap in public investment. Through different schemes, such as the national recovery plan and calls from the Ministry of Education, approximately €25 million was invested in the space sector. This includes a €15 million investment into TIK Stephanik, a new satellite technology development and research infrastructure across the whole Slovak Republic, and a €10 million space call directly under the patronage of the Ministry of Education. Alongside this, regional initiatives such as the Eastern Slovak Space Cluster are reinforcing the geographic spread of the ecosystem and building links between academia, industry, and government.

Equally important are educational activities and community-driven initiatives. The Slovak Space Office has introduced the Cansat competition, engaging high school students in designing and launching miniature satellites, while annual hackathons bring together innovators to tackle challenges in areas such as space safety and environmental monitoring.



Source: VytahConf 2025



The Spaceport_SK project provides incubation, mentoring, and matchmaking for startups. Conferences such as VýťahConf in Bratislava complement these efforts by connecting scientists, entrepreneurs, and policymakers, and by linking Slovak actors to the wider international ecosystem.

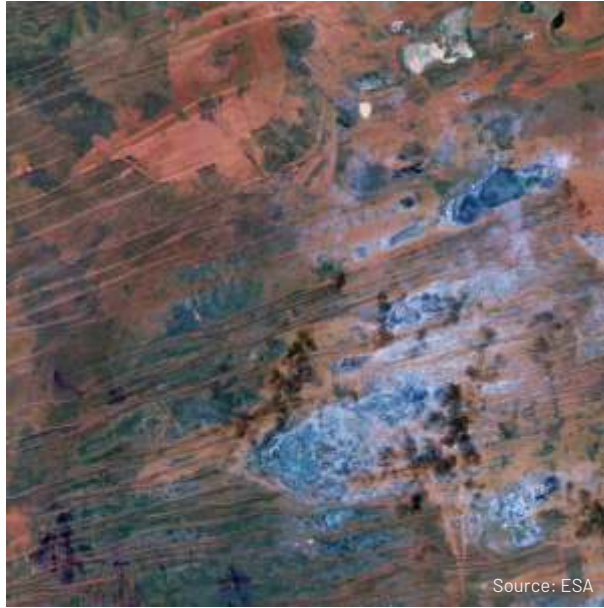
Finally, Slovakia became the first V4 country to adopt a dedicated space law, which came into force on 1 February 2025. This legal framework sets the rules for national actors, ensures alignment with international obligations, and provides the certainty needed for investors and entrepreneurs. It marks a critical step in strengthening Slovakia's position as a responsible and ambitious spacefaring nation.

In summary, Slovakia's national contribution to the V4 space ecosystem is defined by a strategic and coordinated approach led by the Slovak Space Office, backed by significant public investment, a clear legal framework, and vibrant grassroots initiatives. Through this combination of top-down policy and bottom-up community engagement, Slovakia is transforming itself into a credible and ambitious player within Europe's space economy, poised to become a regional hub for downstream services, STEM education, and innovative NewSpace ventures.



**ESA BIC Slovakia:
A New Era
for Innovation**

04



Intro

Slovakia's space ecosystem has grown quickly, but until recently it lacked a gateway for turning promising ideas into businesses. The launch of ESA BIC Slovakia on 1 September 2025 fills this gap, giving innovators a home where research, mentoring, and finance meet. Unlike earlier initiatives that relied on ad-hoc support, the incubator offers a permanent structure to nurture startups and connect them with Europe's wider space economy. Its establishment signals Slovakia's determination to match the ambitions of its V4 partners and play a stronger role in shaping regional innovation.

Slovakia's entry into the European Space Agency as an Associate Member in 2022 marked a decisive step in the country's integration into the European space economy. In just a few years, the Slovak ecosystem has moved from isolated projects to a coordinated national strategy, supported by the Slovak Space Office and articulated in the Slovak Space Strategy 2030+. For several years, one crucial element was missing: a dedicated business incubation centre under the ESA BIC network. That gap has now been filled. ESA Invitation-to-Tender for ESA BIC in Slovakia was opened in April 2025. Slovak space community reacted swiftly and decisively with preparation of the project consortium, which would propel our space community in every region. The only bid was presented by a national consortium, strategically led by the East Slovak Space Cluster (ESSC) from the technological hub of Košice, unites leading academic, research, and industrial institutions to set the direction for the national space agenda. Providing crucial regional coverage, the consortium includes the Slovak University of Technology in Bratislava (STU) as the hub for Western Slovakia, bringing decades of proven experience in supporting deep-tech companies through its successful InQb incubator. Completing the national reach, the University of Žilina (UNIZA) serves as the center for Central Slovakia, leveraging its strong focus on technology transfer and applied research. This powerful synergy ensures that startups across Slovakia have access to multidisciplinary expertise, cutting-edge infrastructure, strong corporate partnerships, and comprehensive support to build an internationally connected space ecosystem.

ESA BIC Slovakia became operational on 1 September 2025, marking a breakthrough moment for the country's innovation ecosystem. Its first activities will be announced later in 2025. Each selected company will receive a comprehensive support package for two years, which includes a financial incentive of up to €60,000, 50 hours of expert business coaching, 20 hours of technical support, and 10 hours of legal and intellectual property advice. To further strengthen this support, the consortium has also established an Advisory Board composed of leading Slovak and international space companies, which will provide startups with invaluable strategic advice and access to important industry contacts.

The motivation for pursuing this incubator has always been clear. ESA BICs provide early-stage companies with a structured framework that combines technical support, mentoring, and access to finance. They act as a bridge between innovative ideas and market-ready solutions, helping entrepreneurs transform research results and prototypes into viable businesses. For Slovakia, which has more than fifty companies already active in the space sector but relatively few that have crossed into global markets, ESA BIC Slovakia now fills a structural gap in the innovation pipeline. It allows local startups to test and validate their solutions under ESA standards, benefit from the credibility of ESA partnerships, and access the broader European network of over twenty established incubators.

Slovakia can draw valuable lessons from its V4 neighbours, all of which already host ESA BICs. The Czech Republic established ESA BIC Prague in 2016 and later expanded to Brno, creating a pipeline that has supported dozens of companies in satellite technology, downstream applications, and dual-use innovations. Poland launched its BIC hubs in Warsaw and Rzeszów in 2022, linking them with a broad ecosystem of accelerators and clusters, and already counts a portfolio of over thirty incubated companies. Hungary integrated its ESA BIC into broader national acceleration programmes, ensuring that space startups are not isolated from mainstream innovation support. These experiences show that the BIC model is highly adaptable: it can focus on upstream hardware, downstream services, or cross-sectoral



technologies depending on national strengths.

In Slovakia’s case, the opportunity lies particularly in downstream applications and software-driven solutions. The country has internationally recognised companies in Earth observation, navigation, and data analytics, as well as strong ICT and automotive sectors that are natural candidates for “spin-in” and “spin-out” opportunities. With ESA BIC Slovakia now operational, the national ecosystem can channel these strengths into the space economy more systematically, turning isolated successes into a steady pipeline of globally competitive startups.

The Slovak Space Strategy 2030+ already outlines the importance of incubation and acceleration for long-term competitiveness. It calls for new instruments to support early-stage companies and recognises the need to increase Slovakia’s absorption capacity for ESA funding. ESA BIC Slovakia fits directly into this framework, building on years of preparatory work by the Slovak Space Office, which consulted stakeholders, mapped startup needs, and secured co-funding commitments. The acceptance of Slovakia’s bid and the start of operations in September 2025 represent the culmination of this effort.

The broader significance of ESA BIC Slovakia goes beyond national borders. Situated at the geographic centre of Europe, Slovakia is well-positioned to serve as a regional hub for startups from neighbouring countries without their own ESA BICs. By connecting entrepreneurs across the V4 and linking them to ESA programmes, the incubator could become a focal point for cross-border cooperation, joint projects, and international investment. It will also strengthen the visibility of the entire region in European innovation policy discussions, ensuring that Central Europe is represented not only as a group of individual actors but as a coordinated ecosystem.

In the longer term, ESA BIC Slovakia is expected to contribute to several strategic objectives: increasing the number of space-related startups, accelerating the commercialisation of research results, attracting private investment into the sector, and fostering dual-use innovations relevant for both civil and defence markets. These outcomes align directly with European priorities in strategic autonomy, technological resilience, and sustainable growth.

In summary, Slovakia’s establishment of ESA BIC is not merely a matter of following the example of its neighbours. It is a strategic necessity that has now become a reality, enabling the country to transform a growing but still fragmented ecosystem into a globally competitive industry. By creating a dedicated incubation structure under ESA’s umbrella, Slovakia empowers its entrepreneurs, attracts investors, and strengthens its role within the V4 and the wider European space economy. The launch of ESA BIC Slovakia on 1 September 2025 is therefore more than an administrative milestone—it is a defining moment in Slovakia’s trajectory as a serious and ambitious space nation.





Education, Skills,
and Public Engagement

05



Intro

A thriving space economy depends not only on technology and investment but also on people. Building the right skills, inspiring future talent, and engaging the public are essential for long-term success. Across the V4, universities, schools, and community initiatives are already shaping this foundation—through student satellites, ESA-backed education programmes, hackathons, and outreach events. These efforts are beginning to create a culture where space is seen not as a distant science but as a real opportunity for careers, innovation, and societal benefit.

Slovakia's entry into the European Space Agency as an Associate Member in 2022 marked a decisive step in the country's integration into the European space economy. In just a few years, the Slovak ecosystem has moved from isolated projects to a more integrated one. The long-term success of the V4 space sector depends not only on its industrial capacity or policy frameworks but also on its people. Education, skills development, and public engagement form the foundation of a sustainable space economy. Without a steady pipeline of trained engineers, scientists, and entrepreneurs, even the most ambitious strategies will struggle to deliver. At the same time, public awareness and interest in space are critical for securing political support and inspiring the next generation.

Across the V4, there is a shared recognition of the importance of STEM education and targeted initiatives to connect students with space opportunities. In Poland, the European Space Education Resource Office (ESERO-Polska), hosted at the Copernicus Science Centre in Warsaw, plays a central role. It provides teachers with training materials, organises workshops, and integrates space topics into school curricula. This programme reaches thousands of pupils each year and has become a model of how to popularise space among young learners. Similar efforts are gradually developing in other V4 countries, with Czechia and Hungary integrating space-themed modules into national science and technology competitions, and Slovakia using events such as Emerging Space and VytahConf to engage schools and universities.

Universities are also stepping up their role. The Czech Republic has pioneered student-built CubeSats, such as VZLUSAT, giving young engineers practical experience with real missions. The Technical University of Košice in Slovakia has integrated CubeSat development into its academic programmes, leading to projects like skCube and GRBAAlpha, which involved students directly in spacecraft design, integration, and operations. In Hungary, mentoring and acceleration programmes run by Design Terminal often include student teams, exposing them to entrepreneurial thinking as well as technical challenges. Poland, meanwhile, is investing in specialised degree programmes in aerospace engineering, artificial intelligence, and geoinformatics, all with a space focus.

Despite these advances, the region still faces challenges. Brain drain remains a serious concern, with many talented graduates moving to Western Europe or North America in search of better opportunities. The shortage of venture capital and the limited number of high-profile employers in the V4 space sector make it difficult to retain talent. Another issue is the lack of systematic integration of space into national education curricula; space is often treated as a niche topic rather than a cross-cutting field that links physics, engineering, IT, and environmental sciences.

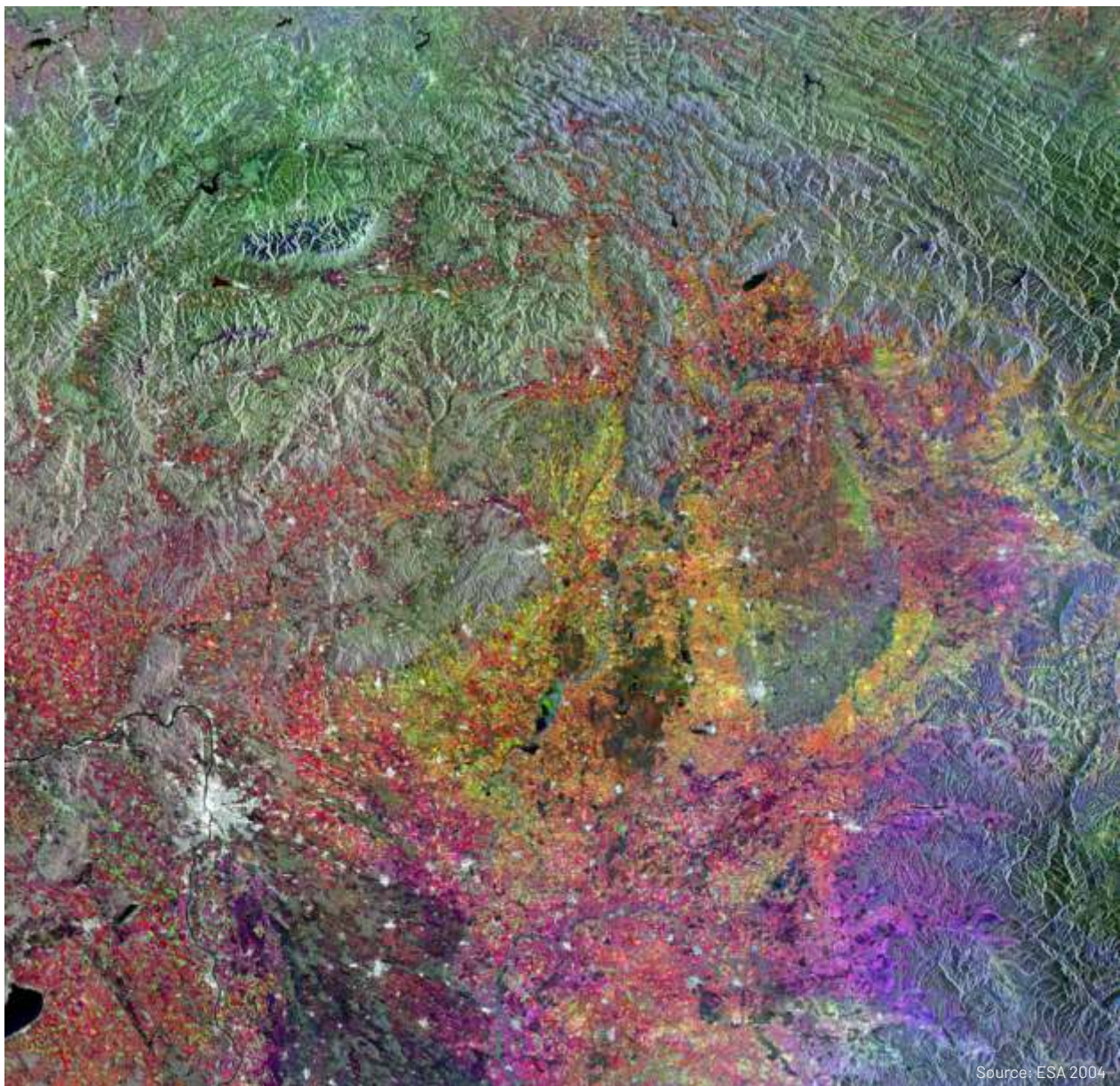
To counter these challenges, V4 countries are experimenting with public engagement and outreach. Conferences and community events play a critical role. VytahConf in Bratislava has become a leading regional forum, combining expert talks with accessible programmes for entrepreneurs, students and the general public. In Hungary, design-focused hackathons bring together young innovators to work on Earth observation and space data challenges. In Poland, ABGi Poland SpaceHUB organises monthly community meetings to connect students, entrepreneurs, and industry professionals. Czechia has successfully linked public engagement with practical projects, for example, through its Makerspace model that invites students and small teams to submit proposals for ESA-funded prototyping.

These activities are not only about education but also about shaping a space culture in the

region. When children see space topics included in school curricula, when students build CubeSats at their universities, and when citizens attend public talks or competitions, space becomes part of national identity and aspiration. This cultural dimension is crucial: it builds the public support that ensures long-term government commitment and creates a sense of pride in national achievements.

Looking forward, the V4 countries have the opportunity to coordinate their efforts more closely. A regional education and engagement strategy could include joint student projects, shared internships at ESA BICs, and regional competitions such as a V4 CubeSat Challenge. It could also promote exchange programmes for students and teachers across the four countries, strengthening both skills and regional cohesion.

In conclusion, education, skills, and public engagement are not peripheral to the V4 space ecosystem, they are at its core. The region already has promising initiatives, from ESERO-Polska to Czech CubeSats, Slovak university missions, Hungarian hackathons, and community-driven conferences. The task now is to scale these efforts, integrate them systematically into national strategies, and connect them across borders. By investing in people as much as in technology, the V4 can secure a vibrant and sustainable space economy that will endure for decades to come.





Investment
and Policy Frameworks
06



Source: ESA - P. Sebirot

Intro

The growth of the V4 space sector relies not only on technical talent but also on the policies and funding structures that enable innovation. While national strategies and ESA membership have opened new doors, gaps remain in venture capital, long-term policy alignment, and incentives tailored to NewSpace needs. Differences in legislation and funding capacity create uneven conditions across the region, while limited private investment slows commercialisation. Strengthening frameworks for finance, regulation, and public-private cooperation will be decisive for turning potential into lasting competitiveness.



Source: ABGI Poland

A thriving space sector requires more than technical talent and entrepreneurial ambition. It depends on a supportive policy environment and the availability of finance to carry ideas from laboratory to orbit. In the V4 countries, progress in this area has been uneven. While national strategies are gradually being adopted and ESA membership has opened access to European funding instruments, gaps remain in venture capital, tax incentives, and public-private partnership mechanisms. This chapter examines how policy and investment frameworks are shaping the region's space economy and where improvements are needed.

At the policy level, all four V4 states have taken significant steps in recent years. The Czech Republic adopted a National Space Plan 2020–2025, which sets clear priorities for industrial participation in ESA and EU programmes, as well as mechanisms for academia-industry collaboration. Poland has embedded space in its broader national innovation strategies, emphasising upstream satellite development and downstream Earth observation applications. Hungary focuses on acceleration and Earth Observation, dosimetry, Small Satellite Development, integrating space into its wider innovation policies. Slovakia, the newest ESA Associate Member, has codified its ambitions in the Slovak Space Strategy 2030+, which outlines goals in research, industry, defence, and public engagement. Taken together, these strategies demonstrate political recognition of the space sector's importance, even if the depth of implementation varies.

Investment frameworks, however, are less developed. The venture capital landscape in Central Europe remains shallow, and few funds specialise in high-risk, long-cycle industries like space. Startups often struggle to find investors willing to bridge the gap between early-stage research grants and market-ready products. This makes ESA contracts and EU instruments especially important. Horizon Europe, the European Defence Fund (EDF), and the CASSINI initiative provide opportunities for V4 actors, but the complexity of application procedures and limited national support services reduce participation rates. Poland has been steadily increasing its use of EU and ESA funding, with participation in ESA programmes

enabling companies to develop more effectively in space-related domains and strengthen their position within European value chains.

Public-private partnerships (PPPs) are emerging as another tool, but their uptake varies. In Poland, government contracts have anchored downstream services such as the National Satellite Information System, giving startups a reference customer. Czechia has used challenge-based funding through the ESA Makerspace model, providing a flexible, low-barrier mechanism to test technologies. Hungary has focused on integrating space into general innovation accelerators, offering mentorship and small-scale funding. Slovakia has so far relied heavily on ESA's PECS and RPA schemes, which returned about 80% of contributions back to national companies, but now faces the challenge of moving from research-oriented projects to commercial ones.

Tax incentives and broader financial policies are also uneven across the region. While all V4 countries provide some form of R&D tax relief, these schemes are often not tailored to the unique challenges of the space industry. High capital requirements, long lead times, and the need for international certification make it difficult for space startups to benefit fully. In comparison, Western European countries often offer targeted incentives, loan guarantees, or export credits specifically for space. For the V4, aligning national tax regimes with the realities of NewSpace would be an important step forward.

A final dimension of policy is visibility and coordination. While the V4 countries cooperate politically in many areas, space has not yet been a consistent priority in their joint agenda. As a result, their collective voice within ESA Councils and EU space policy discussions is weaker than it could be. A coordinated V4 position, backed by joint strategy papers or shared projects, would give the region more weight and increase its ability to shape European funding instruments to reflect Central European needs.

In summary, the V4 countries have laid important foundations in policy and investment frameworks, but more is required to unlock the region's full potential. National strategies exist, but implementation is uneven. Funding instruments are available, but access remains challenging. PPPs show promise, but scale is limited. Tax incentives exist, but they are not tailored to the realities of space entrepreneurship. The key recommendation is clear: the V4 must combine national reforms with regional cooperation, leveraging ESA and EU instruments while building investor confidence through coordinated policies and anchor-customer commitments. If these steps are taken, the region can create a financial and regulatory environment that allows its space startups and SMEs not only to survive but to thrive in global competition.





Outputs
and Recommendations
07



Intro

The Space for V4 project has provided a unique opportunity to map national ecosystems, identify best practices, and highlight the transformative potential of regional cooperation. The findings collected from Hungary, the Czech Republic, Poland, and Slovakia confirm that each country has developed distinct strengths, yet all face similar challenges: limited private investment, fragmented support structures, and the need for greater visibility within European programmes. Together, these insights form the basis for recommendations that can guide the future of the V4 space economy.

One of the key outputs of the project is a comprehensive database of V4 space actors, which includes companies, research institutions, clusters, and support organisations. This database provides not only contact information but also detailed profiles of infrastructure, capabilities, and current demands. It is designed as a living tool that can evolve into a demand-offer matching platform, enabling effective collaboration across the region. The database is complemented by a SWOT analysis that highlights strengths such as strong academic traditions and growing industrial bases, while identifying weaknesses such as limited venture capital and insufficient coordination.

The national case studies provide several transferable lessons. From Hungary, the region can learn the value of embedding space entrepreneurship into broader acceleration programmes, ensuring that space startups benefit from general innovation ecosystems. The Czech Republic demonstrates how low-barrier, challenge-driven instruments like the ESA Spectrum Sharing Makerspace can attract new actors and feed directly into ESA BIC pipelines. Poland offers the most comprehensive example, showing how the integration of ESA incubators, brokers, and Spark funding with national accelerators and clusters creates a seamless innovation pipeline. Slovakia's experience, meanwhile, illustrates how grassroots initiatives and community-driven events can complement institutional strategies and build awareness even before formal structures such as ESA BIC were established.

One of the clearest recommendations of this project was the need to complete the V4 ESA BIC network by establishing a Slovak incubator. With ESA BIC Slovakia operational since 1 September 2025, this milestone has now been achieved. The incubator gives Slovak startups the same opportunities already available in Prague, Brno, Warsaw, Rzeszów, and Budapest, while also strengthening cross-border collaboration between all four countries.

Looking ahead, the priority is to ensure that ESA BIC Slovakia quickly develops a strong portfolio of incubated companies and positions itself as a hub for international collaboration. Joint activities between the V4 BICs, such as regional acceleration challenges, shared pilot projects, or joint calls for dual-use innovation, would build on this achievement and help attract further investment to the region.

The most important outcome of the Space for V4 project is the recognition that regional cooperation is not optional but essential. No single V4 country can achieve global competitiveness alone; together, however, they can form a significant innovation hub within Europe. By combining industrial capacity, academic excellence, and entrepreneurial energy, the V4 has the potential to position itself as a cost-competitive and resilient contributor to Europe's space ambitions. The outputs of this project—databases, case studies, and recommendations—are intended as practical tools to guide this process and inspire future joint initiatives.

Insights from the V4 Space Companies Database

One of the major outputs of the Space for V4 project is a shared database mapping companies, research institutions, clusters, and other actors across the V4 space ecosystem. Though still being expanded, its initial analysis already highlights the structure, strengths, and gaps of the regional industry.

Most organisations are concentrated in the capitals—Budapest, Prague, Warsaw, and Bratislava—while hubs such as Brno, Košice, Kraków, Gdańsk, and Szeged also emerge.

Country	Company Name	Size	Specialization / Capabilities
Slovakia	Bratislava, Liptovsky Mikulov, Banska Bystrica, Trenčín, Zlaté Moravce, Lučenec, Prievidza	SME	large processing units, sensor OS integration, calculation algorithms
Slovakia	Bratislava	SME	cloud computing, cybersecurity, communication software, UAV control software, embedded systems
Slovakia	Bratislava	SME	embedded systems, sensors, C++
Slovakia	Bratislava	SME	web GIS, 3D GIS, processing geodata, data visualization
Slovakia	Bratislava	SME	C++ embedded Linux, IoT protocols
Slovakia	Bratislava	SME	IoT automation software, data analysis
Slovakia	Bratislava	SME	PLC programming, HMI/SCADA interfaces, ERP/SCADA connectivity, simulation, testing, production
Slovakia	Bratislava, Detajka, Šobka	SME	robotics, automation, PLC integration
Slovakia	Bratislava	SME	robotics, automation, PLC integration
Slovakia	Bratislava	SME	robotics, automation, PLC integration
Slovakia	Bratislava	SME	robotics, automation, PLC integration
Slovakia	Košice	SME	robotics, automation, PLC integration
Slovakia	Bratislava	SME	robotics, automation, PLC integration

Source: Raymond Hsu/Unsplash, Vytahconf

Source: V4 for Space

Smaller countries like Slovakia show high densities of actors relative to population, signalling strong momentum despite limited resources.

The majority of organisations are SMEs, often startups or spinoffs from universities. They form the backbone of the ecosystem, supported by academia and clusters that bridge research with commercialisation. Downstream activity dominates, with many firms active in Earth observation, satellite data, and geospatial applications. A smaller but important group is engaged in upstream work such as satellite components, ground stations, testing, and UAVs. Promising niches include navigation, materials, and CubeSat integration, though capacities remain fragmented.

Many actors focus on services such as consulting, training, and system integration. This reflects both early-stage development and demand for flexible expertise, but it also underlines the need to convert capabilities into repeatable, scalable products.

Applications cluster around environmental monitoring, energy, urban management, agriculture, and telecom—fields aligned with European priorities like the Green Deal and climate resilience. Dual-use services in defence and security are also increasing in relevance.

Several lessons emerge: capital cities should serve as anchor hubs, complemented by secondary nodes; complementary strengths—Poland’s scale, Hungary’s upstream focus, Czechia’s precision engineering, and Slovakia’s density—should be combined; service-oriented firms need targeted support to productise; and outreach must improve investor readiness and international visibility.

Even in its early form, the database is already a unique tool for coordination, visibility, and planning. It highlights dozens of specialised SMEs, backed by strong academic partners and clusters, confirming the V4’s potential as a competitive European space player. As it evolves into a demand-offer matching platform, it will serve not only researchers and policymakers but also entrepreneurs and investors, strengthening cross-border cooperation and market access.



Outputs
and Recommendations
08



Source: Photo by Startae Team on Unsplash

Conclusion

The Space for V4 project set out with a clear ambition: to demonstrate that regional cooperation among the Visegrad countries can serve as a catalyst for space innovation and economic growth. By gathering best practices, mapping ecosystems, and engaging stakeholders, the project shows that while the V4 countries are at different stages of development, their combined potential is far greater than the sum of its parts.

The case studies highlight the diversity of strengths across the region. Hungary has demonstrated the power of acceleration and human spaceflight momentum. The Czech Republic offers an impressive industrial supply chain and innovative support tools such as the ESA Spectrum Sharing Makerspace. Poland has built the most complete ecosystem, with strong upstream satellite manufacturing, downstream applications, and launch capabilities. Slovakia, the newest ESA Associate Member, illustrates how grassroots initiatives, ICT strengths, and coordinated policy can quickly build credibility.

What unites these experiences is the recognition that no V4 country can achieve global competitiveness alone. The challenges of the space industry—high barriers, long investment cycles, and the need for scale—are too great to tackle in isolation. Together, however, the V4 can create a robust and resilient ecosystem, pooling infrastructure, harmonising policies, and building joint projects. A coordinated approach also ensures startups are exposed to cross-border collaboration early, preparing them for global markets.

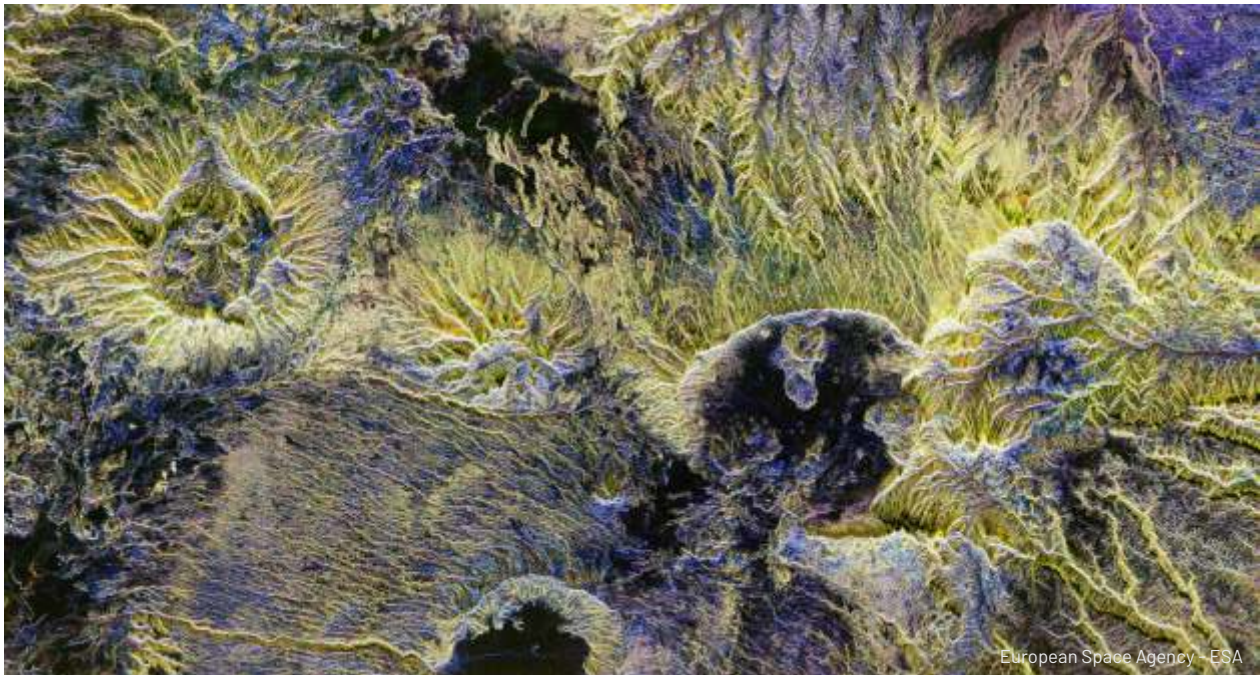
The role of the European Space Agency is central. ESA membership has been transformative, opening access to missions, networks, and co-funded opportunities that validate technologies and attract investment. For Slovakia, the launch of ESA BIC Slovakia in September 2025 completed the V4 incubation network, enabling startups in Prague, Brno, Warsaw, Rzeszów, Budapest, and Bratislava to collaborate directly. This network strengthens not only national ecosystems but also the region's collective visibility within Europe.

Looking ahead, the vision for the V4 space economy is clear: complementarity, sustainability, and strategic autonomy. Complementarity means building on national strengths while pursuing regional projects. Sustainability means embedding space in education, industry, and public services. Strategic autonomy means contributing to Europe's independence in critical technologies, ensuring resilience in the face of global competition.

Realising this vision will require action on multiple fronts. Policymakers must continue to create favourable frameworks through tax incentives, co-funding, and long-term strategies. Industry leaders must seek cross-border partnerships and ESA opportunities to secure positions in global supply chains. Universities must inspire and train the next generation, while outreach efforts ensure the public understands the value of space for society.

The Space for V4 project has shown that the building blocks for success already exist. The challenge now is to connect them into a coherent, competitive ecosystem. With determination, cooperation, and strategic vision, the V4 can position itself as a strong contributor to Europe's NewSpace era.

The call to action is simple: work together, invest boldly, and think beyond national borders. By embracing this approach, the V4 will not only strengthen its own economies but also contribute to Europe's collective ambitions. The story of the V4 in space is only beginning, but the opportunities are vast.



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About the International Visegrad Fund

The International Visegrad Fund is a regional donor organisation established in 2000 by the governments of Czechia, Hungary, Poland, and Slovakia to foster cooperation within the V4 region and with neighbouring countries. The Fund provides support through grants, scholarships, fellowships, and residencies, focusing on culture, education, innovation, research, public policy, environmental protection, and social development. Its annual budget, contributed equally by the four member states and complemented by external donors, enables the realisation of hundreds of cross-border projects each year. Over the past two decades, the Fund has facilitated collaboration among municipalities, universities, NGOs, businesses, and cultural institutions, strengthening mutual trust and regional integration. By supporting initiatives that address common challenges and promote innovation, the Fund contributes to the long-term competitiveness and resilience of Central Europe. Through this mission, the International Visegrad Fund has become a key instrument for building sustainable partnerships and advancing shared values across the region.

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