



EUROPEAN SPACE AGENCY.
ELEVATING THE FUTURE OF EUROPE.

ESA STRATEGY 2040

IN FOCUS | Edition 2025

→ THE EUROPEAN SPACE AGENCY

ESA'S VISION, MISSION AND VALUES

The European Space Agency is dedicated to fostering cooperation among European States in space research and technology, aiming to advance scientific knowledge and operational space applications. Our mission drives us to push the boundaries of exploration and innovation. At the same time, our vision focuses on benefiting humanity and nurturing a sustainable, inclusive, and prosperous future in space and on Earth.

VISION

UPLIFTING EUROPEAN ASPIRATIONS
FOR A BETTER TOMORROW.

MISSION

LEAD AND ORCHESTRATE EUROPEAN SPACE
EXCELLENCE TO BUILD A MORE PROSPEROUS,
RESILIENT, INDEPENDENT AND INSPIRING LIFE
FOR ALL OF EUROPE.

CORE VALUES

The enduring success of ESA hinges on its strategic choices and investments today, along with our unwavering commitment to our five guiding Core Values, which are integral to everything we do:

1 EXCELLENCE

We deliver outstanding space solutions for Europe through our talented workforce.

2 RESPONSIBILITY

We act transparently and with accountability and are committed to quality and sustainability.

3 INSPIRATION

We ignite the enthusiasm of Europeans to cultivate a world-class space sector.

4 INCLUSION

We value diversity and treat everyone with respect and fairness.

5 COOPERATION

We work well together and with our industry to strengthen European space capabilities and grow global partnerships, driving a prosperous and autonomous European space ecosystem.

FOREWORD BY THE CHAIR OF THE ESA COUNCIL

Since its establishment in 1975, the European Space Agency has been at the forefront of global space research, technology, and exploration. Over the decades, the unwavering trust of our Member States has been critical in jointly shaping ESA's world-class achievements, including breakthrough scientific missions, cutting-edge technological advancements, the development of unique space infrastructures, as well as secure access to space. The resulting creation of new applications we all use in our day-to-day lives provides essential services and innovations for Europe and its citizens. Finally, through robust international collaborations, ESA has ensured that Europe remains a key player in space.

As we look to the future, it is evident that the landscape of space activity is evolving rapidly. Across the globe, space is increasingly recognised as a vital component of national strategies for resilience, technological advancement, and economic growth. Public investment in space is rising at unprecedented levels, and the commercialisation of space activities has brought the private sector to the forefront of space innovation. The convergence of space technologies with digitalisation, as well as the growing intersection between space and defence, is reshaping the industry in ways unimaginable just a decade ago.

For Europe to maintain its leadership position and role as a globally trusted partner in this highly competitive and strategic domain, we must be prepared to meet these shifts with renewed ambition and enhanced investment. Space technologies are not just tools for exploration and discovery; they are essential pillars for economic growth, scientific advancement, national security, and societal resilience. As a result, there is a growing understanding of the importance of space for our society across Europe and that we must position ourselves together to ensure long-term autonomy, global competitiveness, and sustainable growth.

It is in this spirit that the Strategy 2040 has been crafted. This document is more than just a roadmap; it is ESA's bold vision for the future, outlining clear objectives that will enable Europe to expand its reach and capabilities in space. Through a focused set of goals and targeted investments, Strategy 2040 positions ESA to unlock new markets, enhance Europe's resilience, and ensure that European space efforts continue to serve as an engine of innovation, technological leadership, and societal progress.

By building on our legacy of success, fostering collaboration, and embracing the opportunities ahead, ESA as an intergovernmental organisation will continue to federate and serve European space research and development efforts, enabling a new generation of innovations. This will allow Europe to become stronger, more competitive, and ready to lead in this critical domain of the future. Strategy 2040 marks the beginning of this next great chapter in ESA's mission, ensuring that Europe's space sector remains a powerful vehicle for progress and prosperity.

As Chair of the ESA Council, I invite you to explore this strategy, confident that it will chart a path for Europe to thrive in the dynamic and rapidly expanding space environment of tomorrow.



Renato Krpoun
Chair of the ESA Council

FOREWORD BY THE ESA DIRECTOR GENERAL

Societies worldwide are undergoing profound transformations, driven by unprecedented global challenges and technological breakthroughs. Europe stands at a pivotal moment, facing new economic and societal implications arising from a shifting geopolitical landscape. In this context, space has rapidly become a distinguishing element for any prosperous nation, defining societies and economies through sustainable growth, resilience, security, STEM advancement, competitiveness, and global influence. Those who fail to harness the full potential of space risk relegation to supporting roles on the world stage.

Over the past 50 years, the European Space Agency has delivered remarkable successes, propelled by a commitment to excellence. However, international competition is intensifying, reducing industry profitability and pressuring Europe's position in the global market. Continuing business as usual would accelerate this decline. Now, more than ever, ESA must adapt to new challenges and act as the catalyst for the transformation of the European space sector, just as it has done over the past five decades.

Europe's leading politicians recognise the strategic importance of space and are seeking ways to better serve their citizens and economies through space initiatives. Europe has the capacity to transform itself into a global space leader—alongside the US, China, and India—by implementing a smart strategy with clearly identified and quantifiable milestones along a sustainable growth path.

In this document, ESA presents its strategy towards 2040, tailored to the European space sector and aspiring to maximise societal benefits from a world-leading position in several domains. We define ambitious objectives for five strategic goals: (1) Protect our planet and climate, (2) Explore and discover, (3) Strengthen European autonomy and resilience (4) Boost European growth and competitiveness, and (5) Inspire Europe.

By pursuing these strategic goals, ESA will enable Europe to address key societal needs, stand shoulder-to-shoulder with global players, and advance the frontiers of science and technology. This will empower European industry to access new profitable growth markets and contribute to a sustainable future for Earth. Leading in new markets will generate spillover growth in other key sectors with civil and dual-use applications—from healthcare to IT and materials science—originating from space-based research.

In line with Agenda 2025, ESA is implementing a transformation process to better prepare itself and the European space sector for the future. But this is only a first step. Europe must commit to new areas of investment and establish clear rules of engagement among ESA, the EU, and national agencies, increasingly engaging industrial actors and funding entities. Despite the challenging geopolitical and budgetary context, Europe must innovate and grow to overcome these hurdles. Space is one of the most effective and impactful levers to achieve that.



Josef Aschbacher
ESA Director General

As Europe's creator of success in space, ESA stands ready to catalyse and enable this ambitious vision for 2040 and beyond. By ensuring that Europe—through space—can lead rather than fall behind, we reaffirm our commitment to excellence and innovation, driving progress where the stars guide us.

ELEVATING THE FUTURE OF EUROPE THROUGH SPACE

Whether gazing at the stars in wonder, or navigating life on Earth, the impact of the European Space Agency (ESA) is present all around us. From Ariane to Rosetta, Copernicus to Galileo, or ESA astronauts on the International Space Station, ESA and its Member States have repeatedly pushed boundaries and set benchmarks to create the European space ecosystem – an industry of exceptional skill, global recognition, and scientific and technical excellence. As we move through the 21st century, several profound changes in the space sector are creating both tremendous challenges and opportunities for Europe:

- 1. A rapid global increase in public investment in space.** Despite its intellectual and economic might, Europe's financial investment share of 11% globally is falling behind
- 2 Commercialisation is expanding the private sector's role in space – in turn affecting the pace and scope of innovation.** This is setting a new direction for the industry, with more reliance on public-private partnerships and commercial providers.
- 3. Space technologies are becoming more important thanks to the digitalisation of society.** From internet services being beamed from space to new climate monitoring applications, the digital economy is fuelling the rapid growth of the space economy.
- 4. Space technologies are increasingly integral to defence and security.** Nations globally have made major investments to bolster their military capabilities, while the EU is at the beginning of integrating space into its defence policies.

As the space economy balloons from \$630 billion per year to a forecast \$1.8 trillion by 2035^a, and as space technologies support 11 of the 16 most critical OECD-designated infrastructures, Europe has a significant opportunity to strengthen its leadership in space. By adapting to these evolving dynamics and addressing emerging societal needs, ESA and its Member States can position themselves at the forefront of this transformative era.

In 2021, the agency introduced 'Agenda 2025', creating momentum to address some of the most urgent challenges, but Europe now stands at a crossroads. It can maintain investment levels and lose ground to competitors, or pursue a clear and ambitious vision, paired with a significantly ramped-up investment effort rooted in its core values, to cement Europe's leadership in space. Thus, taking into account Agenda 2025, **Strategy 2040** lays out ESA's future activities and priorities to:

- Ensure that its space activities and programmes can optimally respond to Member States' societal needs and policy priorities at various levels.
- Ensure the agency remains and further grows as a top-tier global space actor through clearly defined objectives and leadership roles.
- Create a clear vision to facilitate strategic decision-making and programme implementation across multiple funding cycles.

The strategy was drawn up following thorough analysis of ESA Member State needs and national space strategies, also taking into account EU policy priorities, key European challenges and global trends. Based on its assessment, ESA has defined **five encompassing goals**, each with corresponding objectives and concrete strategic actions, to chart a path forward for Europe in space:

^a Space: The \$1.8 Trillion Opportunity for Global Economic Growth https://www3.weforum.org/docs/WEF_Space_2024.pdf

GOAL

OBJECTIVES

PROTECT OUR PLANET AND CLIMATE

01

- Develop the technologies, missions, applications and services that will enable progress in acting to address climate change, degradation of the environment and pressure on natural resources.
- Spearhead a greener, circular economy in space with global standards for sustainability and a zero debris environment.
- Position Europe as a global leader in space safety by expanding capabilities in space weather services and planetary defence.

EXPLORE AND DISCOVER

02

- Elevate ESA's global leadership in Earth and space science to unravel the mysteries of our planet and the Universe.
- Expand ESA's unique capabilities and roles in the new space exploration era in low Earth orbit (LEO), around and on the Moon, and towards Mars.

STRENGTHEN EUROPEAN AUTONOMY AND RESILIENCE

03

- Secure autonomous and competitive access to and mobility in space through new (potentially including reusable) transportation systems and services
- Develop next-generation technologies and systems in connectivity, PNT, and EO for a more connected and safer future for citizens.
- Develop state-of-the-art space solutions for the prediction and management of natural and anthropogenic disasters and emergencies.

BOOST EUROPEAN GROWTH AND COMPETITIVENESS

04

- Accelerate innovation by spearheading the development of cutting-edge competitive European space technologies in key strategic domains.
- Strengthen industrial capacity and competitiveness to unlock new markets and drive economic growth, fostering a more prosperous society.
- Position Europe as a commercial hub in the booming global space economy, attracting significant private investment.
- Establish Europe as a space research hub, by leveraging world-class technical facilities and, by investing in and attracting top STEM talent.

INSPIRE EUROPE

05

- Reinforce the European space ecosystem through world-class project management and intensified cooperation among key European stakeholders.
- Position ESA as a model for leveraging space activities inclusively to inspire young people and future generations from diverse backgrounds.
- Enable ESA Member States and the EU to harness space capabilities for greater influence in international diplomacy and global affairs.



We face profound, existential risks driven by sustainability challenges and climate change. The World Economic Forum^b has named three key critical climate issues facing humanity: extreme weather events, such as recent floods in Spain that killed 230 people and caused billions of euros of damage; critical change to Earth's systems; and biodiversity loss and ecosystem collapse. However, the problems go beyond the biosphere as sustainability challenges are arising in space. The number of active satellites in orbit could rise from about 11 000 in 2025 to 60 000 by 2030 meaning constant vigilance is required. Congested orbits, space weather events, and asteroids can endanger satellites and astronauts, and disrupt communications, power grids, and satnav-reliant services on Earth. Pursuing this goal will ensure ESA continues to lead in the use of space, responsibly and sustainably, to address the protection and management of Earth.

^b Source: Global Risks Report 2024

PROTECT OUR PLANET AND CLIMATE

01

OBJECTIVE 1.1

Develop the technologies, missions, applications and services that will enable progress in acting to address climate change, degradation of the environment, and pressure on natural resources.

By 2040, ESA will support Europe through space-based systems and digital twins of our planet to foster scientific understanding of the processes of Earth's natural systems.

STRATEGIC ACTIONS

- **Support Europe as a driver of a thriving Earth observation ecosystem** powered by cutting-edge tech, next-generation satellites, and comprehensive pan-European system architecture.
- **Identify climate and environmental tipping points** by the early 2030s via new observation missions and enhanced predictive modelling capabilities, including AI-powered digital twins.
- **Support the development of climate change mitigation and adaptation strategies** through data-driven approaches and accurate environmental forecasting, thereby contributing to climate change policies and the UN Sustainable Development Goals.
- **Reinforce collaborative environmental efforts and strengthen partnerships** with international organisations, national space agencies, and commercial entities.

OBJECTIVE 1.2

Spearhead a greener, circular economy in space with global standards for sustainability and a zero-debris environment.

ESA will pursue a zero debris future by 2030 via stringent targets of collision probabilities for spacecraft below 1 in 1000 and maintaining a 99% or greater likelihood of successful disposal, and a fully sustainable use of space with the establishment of a circular space economy by 2040.

STRATEGIC ACTIONS

- **Contribute to a net zero debris space environment** using technologies and global frameworks, to safeguard the future use of Earth orbits.
- **Promote a cleaner and greener space sector** by compliance with environmental legislation, assessing the life cycle impacts of missions, adopting sustainable practices in all areas, and preserving dark and quiet skies in the interests of astronomy.
- **Champion a circular space economy** via sustainable satellite design and developing in-orbit servicing, assembly, manufacturing and recycling capabilities.

OBJECTIVE 1.3

Position Europe as a global leader in space safety by expanding capabilities in space weather services and planetary defence.

The impact of extraterrestrial events should not be underestimated—a moderate solar event could cost Europe €15 billion or more^c. ESA aims to play a key role at global level in space weather and planetary defence from solar storms and Near-Earth Objects (NEOs).

STRATEGIC ACTIONS

- **Establish a comprehensive European space weather network service** by the mid-2030s.
- **Improve NEO detection and monitoring** by developing a dedicated network of survey telescopes while continually advancing integral technology.
- **Strengthen NEO fast-reconnaissance and deflection** by developing a European capability to deflect hazardous NEOs, such as asteroids, in the 2030s.

^c Source: ESA / PwC SWE Cost Benefit Analysis

For half a century, ESA has led the way in uncovering the mysteries of our planet and the Universe, shining a light on the workings of far-off moons, and following comets as they chase around the Sun. Inquisitiveness and innovation have been our guides – drawing us to answer the fundamental questions of our age while establishing Europe's role as a strategic leader and partner in Earth science, space science, and exploration of the Universe.

With worldwide actors engaged in a new space race, ESA's place at the forefront must continue by enhancing European presence in low Earth orbit (LEO) and initiating sustainable lunar operations in preparation for Mars missions. Cislunar infrastructure, advanced technologies and sustainable habitation systems will facilitate this, alongside international collaboration and participation in the ISS and its successors. Ambition is key to advancing scientific knowledge, fostering co-operation, and bringing prosperity to society at large.

EXPLORE AND DISCOVER

02

OBJECTIVE 2.1

Elevate ESA's global leadership in Earth and space science to unravel the mysteries of our planet and the Universe.

Science has shaped European identity for centuries, fostering reason, empirical evidence, and progress – a legacy that continues today as we continue to seek answers to the most fundamental questions of our time. The agency will continue developing world-class missions characterised by scientific excellence, enormous discovery potential, and tremendous technological innovation, along with deep public engagement.

STRATEGIC ACTIONS

- **Deliver world-leading science through 'Cosmic Vision' missions** by
 - Operating unique missions to map the Universe's large-scale structure in 3D (Euclid), and to investigate Jupiter and its ocean-bearing moons (Juno).
 - Launching missions between 2025 and 2037 to study Earth's magnetic environment (Smile), exoplanets (Plato and Ariel), a pristine comet (Comet Interceptor), and the first gravitational waves from a space-based observatory (LISA). Further missions will provide the most complete view of Venus (Envision), examine the most energetic phenomena in the Universe in unprecedented detail (NewAthena) and image nearby galaxies and surroundings (Arrakis).
- **Ensure continued leadership in space science through implementation of Voyage 2050, the agency's space science strategy,** by
 - Searching for life and life-enabling chemistry by preparing the first Large mission targeting Saturn's ocean-bearing moon Enceladus.
 - Broadening mission types, starting with the next Medium mission selection.^d
 - Beginning studies on temperate exoplanets, the Milky Way ecosystem, and how the Universe's first cosmic structures formed and evolved.

• **Implement the ESA Earth observation science strategy** by

- Pursuing blue-sky research and cutting-edge technology development to improve planetary observation capabilities and Earth system science knowledge through our Earth Explorer missions.
- Enhancing simulation and prediction capabilities around Earth's evolution, that encompass and inform the latest scientific advances.

OBJECTIVE 2.2

Expand ESA's unique capabilities and roles in the new space exploration era in LEO, around and on the Moon, and towards Mars.

As we enter a new epoch of space exploration, ESA must build on its pioneering accomplishments and unique strengths to remain a key partner in exploration, securing a foothold on nearby destinations to enable the next leaps in the exploration of our Solar System.

STRATEGIC ACTIONS

- **Bolster European access to, and presence in, LEO** in a 2030s post-ISS world by exploring new opportunities for collaboration and developing sovereign and autonomous cargo and crew transport services, acting as a basis for the big leap to Mars.
- **Establish essential infrastructure for lunar operations** such as robust communication and navigation systems to enable and sustain exploration and utilisation activities on and around the Moon.
- **Explore Mars** to unlock scientific discoveries ahead of human exploration by developing and testing critical infrastructure and forward-facing technology.
- **Monitor the international scenario and identify stronger international collaboration** by leveraging Europe's position of strength in technology and industry to broker essential partnerships with international institutional partners and private entities, while reinforcing strategic autonomy.

^d Chosen from the remaining candidates: M-MATISSE, Plasma Observatory, or THESEUS

At a time of great geopolitical shifts, ESA is intensely focused on its approach to contribute to European autonomy and resilience. The guarantee of autonomous and competitive mobility in space is becoming crucial – not just for access and oversight purposes, but because of the impact space-based technologies will have on Earth.

To improve resilience, ESA will contribute to enhancing Europe's space-based secure connectivity, hyper-precise navigation and Earth observation capabilities, and use of new space solutions. This will enable Europe to respond better and faster to ongoing and emerging crises, as well as handle challenges posed by increasing uncertainty.

STRENGTHEN EUROPEAN AUTONOMY AND RESILIENCE

03

OBJECTIVE 3.1

Secure autonomous and competitive access to and mobility in space through new transportation systems, solutions and services.

ESA will boost Europe's space access and mobility by 2040, making it a key player in space transportation. Recognising that launch costs dictate competitiveness in space, the agency will reduce reliance on non-European entities and strengthen its own capabilities.

STRATEGIC ACTIONS

- **Develop advanced space transportation systems** that are scalable and more sustainable, with greater performance capabilities, potentially reusable and at globally competitive prices.
- **Stimulate the LEO economy with in-orbit services** such as data processing, debris removal, manufacturing, and supporting commercial and institutional missions.
- **Ensure autonomous European space access** through service-based launch procurement, a 'hub-and-spoke' logistics network, and dual-use asset integration.

OBJECTIVE 3.2

Develop the next generation technologies and systems in connectivity, PNT and EO for a more connected and safer future for citizens.

By 2040, ESA will contribute to strengthening Europe's connectivity, navigation and remote sensing capabilities by developing and enhancing resilience and robustness of these systems and exploiting the potential of the quantum revolution in the coming generations of systems.

STRATEGIC ACTIONS

- **Contribute to strengthening Europe's competitiveness in global markets** via disruptive and critical technologies (e.g. quantum cryptography, a Solar System internet) that are standardised, industrialised, and thus scalable.
- **Develop the next generation of space capabilities and infrastructures for the Copernicus programme and in secure connectivity**, well before 2030.
- **Secure Europe's continued leadership in PNT**, accurate to within millimetres of range and picoseconds of time, supporting mission management, transportation and other critical infrastructure, while enabling new applications and services.

OBJECTIVE 3.3

Develop state-of-the-art space solutions for the prediction and management of natural and anthropogenic disasters and emergencies.

Natural and human-made threats are becoming bigger and more complex. Europe must continue expanding its crisis response capabilities by improving infrastructure and creating services, building on its current strengths while addressing critical gaps in these domains.

STRATEGIC ACTIONS

- **Improve uninterruptable crisis prevention and response capabilities** by building the next generations of PNT, EO, and secure telecommunications systems.
- **Develop secure and resilient digital communications infrastructure** in collaboration with the European ecosystem, to support space-to-device integration.
- **Prepare the basis for the next-level European resilience capabilities in crisis management** by mapping and identifying current assets, performance gaps, and user requirements.

A marked change in the modern space environment is commercial involvement. Though greatly beneficial, it has altered the global approach to, and public sector's role in, space.

ESA stands ready to capitalise on these changes and contribute to positioning Europe as a global hub in space technologies, igniting innovation and unlocking new markets for space goods and services globally to boost European industry growth and competitiveness.

The agency's actions can bolster Europe's strengths in R&D through strategic investment, cultivate new markets within the European space sector, and shepherd new entrants into those markets. Thus, the European space sector can be a pivotal commercial centre for private investment while attracting and retaining world-class talent as the best destination for expertise and innovation.

BOOST EUROPEAN GROWTH AND COMPETITIVENESS

04

OBJECTIVE 4.1

Accelerate innovation by spearheading the development of cutting-edge competitive European space technologies in key strategic domains.

As part of ESA's 2040 Technology Vision, European space technology capabilities and leadership will be further advanced by ESA investing in cutting-edge innovations that serve transversal purposes, foster a thriving space industry, and in tandem facilitate broader strategic aims.

STRATEGIC ACTIONS

- **Breakthrough performance technologies**, such as:
 - **Innovative green propulsion and hypervelocity endeavours** including efficient high-speed vehicles for ground-to-orbit and deep-space missions.
 - **Large astro architecture** assembled in orbit, **advanced in situ surface exploration** both by robots and humans, **ultra-compact high-performance satellites** to minimise launch costs and **enhance efficiency**, and **Very Low Earth Orbit (VLEO)** technologies, e.g. for high-resolution Earth observation.
- **Next-level autonomy technologies**, including:
 - **Revolutionary remote sensing** capabilities using advanced RF and optical instrumentation and quantum-based methods, and **highly autonomous space systems** to enable advanced and long-duration missions, including in-orbit self-assembly and intelligent decision-making.
- **A circular and sustainable space economy**, including:
 - Clean, green, and sustainable technologies needed to support space operations, promoting **dark and quiet skies** through minimising optical and RF interference, and **energy-efficient hibernation systems**.
 - Development of **space oases**: autonomous, self-sufficient habitats for long-term human life beyond Earth, and preparing for future deep space travel and exploration via enhanced life-support technologies.

OBJECTIVE 4.2

Strengthen industrial capacity and competitiveness to unlock new markets and drive economic growth, fostering a more prosperous society.

Building these new technologies in a competitive and innovative space sector requires strong European industrial capacity. ESA will enable the cost-effective, efficient and scalable production of space technologies that create new commercial avenues and seed new markets for the broader benefit of Europe and society at large.

STRATEGIC ACTIONS

- **Facilitate cross-sector partnerships and private investment**, applying regional space strengths to broader commercial uses.
- **Promote space technology and industrialisation** by shifting to serial production and **facilitating market access and innovation** via guidance and support in business and technology fields and fostering a European network.
- **Optimise internal processes to keep ESA and its Member States competitive in space**, including streamlining internal processes and consider more agile funding cycles.
- **Build new strategic partnerships with national entities and the EU** to create a cohesive approach to advancing the space sector, locking in Europe's leadership.

OBJECTIVE 4.3

Position Europe as a commercial hub in the booming global space economy, able to attract significant private investment.

By 2040, Europe should become a leading commercial hub for the global space economy. ESA will enable this via private investment, strategic partnerships (including public-private), and leveraging Europe's strong industrial pedigree and talent, both inside and outside of the space industry.

STRATEGIC ACTIONS

- **Systematically explore commercial opportunities for growth** including technology access, finance and upscaling for new space sectors and approaches to **attract private investment with Member States and the EU** through public-private partnerships.
- **Unlock faster innovation** with responsive R&D programmes, shorter funding cycles, and streamlined processes to foster a competitive market and ensure efficient programme implementation.

OBJECTIVE 4.4

Establish Europe as a space research hub, by leveraging world-class technical facilities, and by investing in and attracting top STEM talent.

ESA believes it is vital that Europe becomes a global epicentre for space research by harnessing its elite technical facilities and supporting its top STEM talent – thus maintaining its position as one of the leaders in space more broadly.

STRATEGIC ACTIONS

- **Reinforce and leverage Europe's world-class sites and research institutes** to ensure they remain state-of-the-art, in collaboration with Member States.
- **Develop a strong talent pipeline** by expanding the offer of scholarships and grants with universities and top R&D centres across Europe.
- **Support Europe's space industry to compete globally** through partnerships and technical assistance, attracting new industries to the space economy.

The agency has built its reputation as a leader in space over the last 50 years by constantly focusing on and drawing eyes to the future. But the work is never finished. As the sole implementing agency for pan-European space programmes, ESA plays a pivotal role in inspiring Europe.

ESA plans to create a more cohesive European space ecosystem rooted in bold missions, pioneering discoveries, and impactful education initiatives – inspiring the coming generations of European scientists, engineers and entrepreneurs to go further, cementing its primacy in space.

INSPIRE EUROPE 05

OBJECTIVE 5.1

Reinforce the European space ecosystem through world-class project management and intensified co-operation among key stakeholders.

The importance of inspiring the next generation is obvious. It requires a more united European space ecosystem, where Member States, the European Union and key stakeholders closely collaborate to foster excitement.

STRATEGIC ACTIONS

- **Strengthening a cohesive European space ecosystem and ESA-EU relationship** with close collaboration between Member States, the EU, and key stakeholders beyond Multiannual Financial Framework cycles.
- **Improving Member States' engagement** by shifting to strategic oversight, enabling ESA to execute programmes more effectively in line with, and complementary to national priorities.
- **Leveraging ESA's programme management expertise** involving complex, long-term, pan-European space programmes with diverse stakeholders.
- **Contributing to European space leadership capabilities through strategic initiatives** including flagship programmes like Galileo, Copernicus and IRIS² as well as potential future programmes aimed at advancing autonomy and resilience.

OBJECTIVE 5.2

Position ESA as a model for leveraging space activities inclusively to inspire young people and future generations from diverse backgrounds.

Meeting today's challenges is only one aspect of securing Europe's leadership – we must also pass our knowledge and excitement to future generations through fostering fascination, encouraging exploration and ensuring equal access to all.

STRATEGIC ACTIONS

- **Inspire young minds through education and outreach** in the form of expert mentorship, interactive platforms, supporting STEM curricula and immersing children in space using VR/AR to explain the trickiest space-related challenges.
- **Reinforce diversity and inclusion in all actions** by expanding initiatives for women, minorities and underserved communities, and highlighting role models to represent all voices.

OBJECTIVE 5.3

Enable ESA Member States and the EU to harness space capabilities for greater influence in international diplomacy and global affairs.

Space for diplomacy (capabilities supporting informed policy and decision-making) and diplomacy for space (enhancing strategic partnerships with stakeholders) can strengthen Europe's global leadership.

STRATEGIC ACTIONS

- **Pursue strategic partnerships for ambitious space programmes** through ESA leadership and unique contributions of ESA and its Member States to high-profile missions in areas of strategic importance.
- **Promote international co-operation and space governance** by aligning space programmes with European global interests and in areas of global challenge.
- **Enhance ESA's status as a trusted international partner** by capitalising on its unique space strengths, selling points, and potential to inspire.

WAY FORWARD

Each of these five interconnected goals, their specific objectives and corresponding technology advancements are integral, interlocking parts of ESA Strategy 2040. It will be implemented through the agency's well-established governance framework, with the **ESA Council** and its subsidiary bodies overseeing programme implementation.

The **ESA Long-Term Plan** will be updated to converge on the strategy while considering the needs and financial capabilities of Member States for realistic and sustainable planning. In line with its role, this will enable it to **function as the financial and operational backbone**, providing a cohesive roadmap, allowing for the optimisation of the use of the agency's resources, to ensure the continuous consolidation of programme implementation and the preparation of corresponding funding by Member States.

The **ESA Council meetings at the Ministerial level in 2025 and 2028 are the first critical milestones** in advancing Strategy 2040's ambitious objectives and in aligning resources. Coordination with the EU's Multi-annual Financial Framework is crucial to create coherence in Europe's approach to space. The five goals, their objectives and strategic actions will be reflected in ESA's planning, funding, and programme management processes, and monitored regularly.

Successful delivery of this strategy depends on ESA's evolution to adapt to its rapidly changing environment. The continuation of **ESA Transformation**, introduced in Agenda 2025, will modernise and improve the agency's internal structures, processes and resource allocation, reinforcing the ability to implement more programmes on-time and within budget. Oversight will be supported by the Independent Project Management Authority. Procurement and geo-return rules will be improved benefitting Member States.

In 2023, European space startups raised nearly €1 billion – up from €18 million in 2014. ESA will leverage the **commercialisation** trend by further promoting the autonomy of industry, procuring services over goods, and becoming an anchor New Space customer, benefitting Europe's society and economy.

ESA-EU collaboration will expand into new domains like climate action, digital innovation, resilience, security, and strategic autonomy. Member States remain beneficiaries of ESA's technical expertise, cutting-edge infrastructure, and decades of experience.

CONCLUSION

Strategy 2040 is a bold, comprehensive, and visionary plan, embracing the progressive potential of space technology to meet European society's needs and responds to a challenging global environment. Aligned with European political, economic and societal priorities, it addresses the issues of now and the future, placing ESA Member States at the heart of the evolving landscape of space activity. Essential for economic progress. Essential for scientific discovery. Essential for societal resilience. Essential for sustainability.

Reflecting the ambitions and possibilities of the European Space Agency, Strategy 2040 is a call to action for its Member States to recognise the critical importance of space and support the investments necessary to realise Europe's full potential in this domain, and to navigate the complexities of the 21st century and the future.

“ As Europe's creator of success in space, ESA stands ready to stimulate and enable this ambitious vision for 2040 and beyond. By ensuring that Europe—through space—can lead rather than fall behind, we reaffirm our commitment to excellence and innovation, driving progress where the stars guide us ”

Josef Aschbacher | ESA Director General



ESA Member States:

Austria
Belgium
Czech Republic
Denmark
Estonia
Finland
France
Germany
Greece
Hungary
Ireland
Italy
Luxembourg
Netherlands
Norway
Poland
Portugal
Romania
Slovenia
Spain
Sweden
Switzerland
United Kingdom

**Long-standing
Cooperating State:**

Canada

Associate Members:

Latvia
Lithuania
Slovakia

**Cooperating
States in Europe:**

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