

# GREEN EUROPEAN SPACE POLICY

POLICY CONTRIBUTION FROM ECOLOGICAL TRANSITION CLUSTER

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## Introduction

Space is a common heritage of humankind and should be used for the benefit and in the interest of all humans. This belief lies at the centre of our international space politics. Our focus is on the civil, peaceful exploration of space and we actively advocate for international cooperation to achieve this end. For us, the role of earth observation in the space sector is important because measuring and fighting climate change is the key task for humanity in the upcoming decades. We want to make sure that access to and the exploration of space - whether through astronautical activities or astronomical observations - does not just remain the privilege of a few rich nations. Space must remain accessible and usable for future generations. Potentials for humanity are diverse but we also advocate to reconcile today's activities with the prevention of medium and long-term risks associated with space activities. The EU should play a pivotal role in international space policy, expand international scientific cooperation, maintain its independent access to space and strengthen its astronaut programme. We oppose the militarization of space and we will work together with international partners to stop the current trend of threats and military exercises in space. Space must not be used for the storage of weapons of any kind.

# Space Law

## International Space Law

We advocate for the establishment of close international ties on all levels and with all players in the space sector. We witness the ongoing militarization of space with growing concern. We call for global disarmament: technical, political and rhetorical. We oppose any European participation in this arms race. We stand with the UN Outer Space Treaty and do not want to see any weapons in space. Open regulatory issues like resource mining, space tourism and suborbital travel, space traffic management and space debris mitigation must be addressed at UN-level and be regulated by the whole of humanity.

The EU should take the leading role in establishing international regulations, which ultimately could take on the form of international institutions. It is of utmost importance that independent, non-partisan institutions preserve the integrity of orbits and their assets to serve the whole of humanity. Particularly, this concerns the tracking and cataloguing of all objects in Earth's vicinity, allocation of orbits for new spacecraft, traffic management and general safety principles for space travel. The international rules need to be enforced with all the political and economic power the EU has, which includes the use of trade sanctions in case of violations.

## European Space Law

We aim for a united legal framework for all space activities within the EU. This framework shall be integrated into wider international space law. At its core lies the value that all generated knowledge should be accessible to the general public. We strive for an open data policy of all projects funded by the EU. We see this as an international responsibility of wealthier countries to broaden scientific data, as well as to expand the knowledge of humanity. Other nations' space programmes share this responsibility. Thus, we advocate for a general and international open data policy for space and Earth observation programmes.

The regulatory gaps identified under international space law are equally important for the European stage. As a first step, unification at the European level is desirable. We dislike the introduction of diverse national space laws across EU member states. Instead, we ask the member states to transfer their sovereignty in this matter to the EU in order to draft one common EU space law. The long-term goal continues to be a united global regulation.



# Space Administration

## International Space Administration

Our goal is to form one united framework for space activities to which every country complies. This could take on the form of an International Space Agency (ISA), which could be responsible for administrative tasks like the registration of space flights, satellite orbits, along with other universal issues such as providing a global collision prevention system or space weather reports.

Furthermore, we advocate for a coordinated, global approach on common goods in space (for instance, a new International Space Station (ISS)). Close international cooperation creates trust and mutual control, which would remedy the militarization of space. The current ISS exemplifies the peaceful cooperation of nations today, especially between Russia and the US. To settle disputes between member states, entrepreneurs and others, we envision the establishment of an independent international court along with a structure to guarantee the enforcement of its decisions.

## European Space Administration

We favour united EU structures without inefficient fragmentation. We appreciate the tremendous work that every individual agency is doing, as well as the cooperation between all national space agencies through the European Space Agency (ESA), the Global Navigation Satellite System (GNSS) and bilaterally. However, we doubt that this segregated working structure is suitable for future challenges.

For us, the cooperative spirit of the ESA is crucial, in particular for its attractiveness and the participation of non-EU members. We want to strengthen the advisory role of the EU in the ESA. Such a constellation would sustain balanced power dynamics in the ESA, as well as enable us to progress as Europe in the field of space. We want to concentrate more national resources at EU level and expand the GNSS. In the long term, all space topics should fall under the competence of the EU, allowing for a broader and more coordinated European approach. As it is customary in the ESA to spend the money for procurement in the country that paid for the mission, the responsible European Commissioner should ensure geographical spending across all member states. In combination with targeted EU funding inside the ESA, this will increase the resilience of the European space sector and boost innovation. It will also improve European competitiveness and excellence, and ensure the balanced growth of a new economic sector in the entire European Union.



# Space Industrial Policy

## Education

We want to enhance public education to raise awareness about the real life impact of space exploration and research. We advocate for the establishment of a European Space Academy, ideally in alliance with the programme of European Universities. The Academy should have its own campus and different institutes to focus on diverse scientific areas related to space, such as engineering, history, law, medicine, and physics.

We want to promote closer cooperation between educational and research institutions. We favor the idea of a European space summer school, which will allow students and young people from schools and universities to improve their knowledge and interest in the field of space exploration and research.

## Research

We are strong promoters of research in all space-related areas. This includes research in zero gravity, celestial bodies, fundamental technologies and data-based approaches. Research enhances the knowledge of humanity and can contribute to solving issues that we are facing, for example, in the fields of climate change or medicine. Large cooperative research projects are indispensable due to the enormous resources and knowledge required. The implementation of Galileo and Copernicus serve as successful precedents, which led to sweeping outcomes. We also favor the use of complementary data from other projects to prevent the duplication of knowledge generation. The proposed initiative for a low-earth orbit constellation (providing secure government communications and bringing internet to remote areas) could be the next extensive project.

To unlock the true potential of space research, we strive for more targeted research funding and the introduction of some *risk capital*. The latter would allow grant recipients and competition winners to conduct specialized research and apply out of the ordinary problem-solving approaches. The system should target researchers as well as entrepreneurs, and be gradually refined and consistently monitored.

Earth observation is key for the fight against climate change, and is therefore especially important to us. The Copernicus Programme provides a variety of valuable data (e.g. CO<sub>2</sub> levels, which are essential to monitor the climate and to transform the global economy). Its applications are

manifold and include coping with natural disasters, fight against hunger, land grabbing, human trafficking, documenting and proving war crimes. Consequently, we promote the expansion of the Copernicus Programme.

Well-known science missions - such as Rosetta (to a comet), BepiColombo (to Mercury), Cassini-Huygens (to Saturn's moon, Titan) or the Hubble space telescope - are outstanding examples of research probes that have massively increased our knowledge of space in recent years. We want to strengthen this important pillar of European space research and the implementation of innovative and pioneering research projects, such as the James-Webb space telescope and missions like ATHENA (to search for black holes) and LISA (to detect gravitational waves).

Astronautic missions inspire research and shape the human drive for discovery and cooperation. While robots and specialized probes can gain some insight, broad-based research needs researchers on the ground. Only humans are capable of creatively solving problems. Medical research on people in weightlessness also helps medicine on earth. Europe should continue the efforts of the European Astronaut corps and aim to participate in manned flights to the moon and Mars with their own contributions and astronauts.

## Manufacturing

Competition between the main players in the field, traditionally the US and China, and a growing number of other countries is increasing. In order to compete, we will need the most efficient structures and a European space sector that focuses on productivity, innovation and expansion of its competitive advantages.

We call for an ambitious and coordinated EU roadmap to develop fully reusable and sustainable operational concepts for space and suborbital travel. Within this roadmap, we want to include open competitions and initial public funding opportunities for innovative launch and further space exploration technologies to promote the investment of venture capital. Our own launchers are important for European autonomy in human spaceflight. The development of sustainable and reusable crewed launchers should be a cornerstone of the roadmap.

Moreover, we advocate for a separation of the defense and the space industries in any field in which the technical interlink does not lead to vast efficiency gains.

## Business models

The results and data generated by any space programme needs to be easily accessible for everybody. The link between data and application cases is the key issue. The EU needs to expand investments in data platforms and tools that process data automatically, so that local, public administrations can make use of the information. The concept of a Space Ideas Lab should be explored. It brings scientists, entrepreneurs, local councillors, and local and regional officials together to find solutions for concrete public problems based on space data. These investments are highly valuable as they foster innovation capabilities, shorten innovation cycles and enhance the utilization of already generated space data.

A strong interlink with classical start-up programmes is key to transform developed ideas into business models. We want to increase funding for dedicated space-related start-up incubators and for the Cassini initiative. These measures particularly target the downstream market within which we see enormous untapped potential.

## Recycling

Ultimately, we advocate for a UN treaty to implement mandatory guidelines for space debris mitigation to all member states.

The EU should spearhead safety and environmental protection in space by introducing a regulation to make it mandatory to decommission space objects that have been launched within the EU. We should explore the option to create a similar system as the Emissions Trading System, which would financially penalize debris generation. In addition, the EU should increase investment in short- and middle-term debris mitigation measures. This includes the Clean Space Initiative as well as research projects aiming at the direct removal of large objects.

For us, it is crucial that the environmental impact of space travel is as small as possible. Thus, we call for strengthening the role of lifecycle analysis in EU tendering procedures to include the full environmental impact of commercial space activities in decision-making. In addition, the current Emissions Trading System for carbon should be expanded to the entire space sector, in particular to space transportation and tourism.



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