03/2021

CLIMATE PROTECTION, INNOVATION, SECURITY AND GROWTH

Proposals from the space industry for implementation in the upcoming legislative period

SPACE TECHNOLOGY “MADE IN GERMANY” – CLIMATE PROTECTION, INNOVATION, SECURITY AND GROWTH

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BDLI
German Aerospace Industries Association

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Germany's successful and innovative space industry requires political activity that provides a sustainable basis for the sector to remain competitive internationally.

Space technology is indispensable in everyday life. It connects people at all times through fast, secure and reliable telecommunications and digital services. Space technology brings people safely to their destinations through precise navigation, contributes significantly to climate protection through ultra-modern Earth observation, provides important data in the event of a disaster and ensures independent access to space for Europe.

Space technology ensures state sovereignty. Thanks to spaceflight, political decision-makers and institutions are being provided with both an objective global basis for decision-making in a wide range of areas and the necessary technologies to better handle serious challenges. The advanced technologies from spaceflight enable enormous economic added value for countless downstream services. Space technology makes an essential contribution to the security of Germany and Europe and facilitates international cooperation.

Spaceflight provides key strategic technologies of central importance for the economy. The German space industry, associated in the BDLI – from small and medium-sized enterprises to system houses – currently employs 10,000 people in high-tech jobs and generates an annual turnover of €2.7 billion. Investing in spaceflight pays off several times over: each euro spent creates a fourfold direct and ninefold indirect added value effect. The space industry has been growing worldwide for many years – at the last ESA Council meeting at ministerial level, Germany signed on to the highest ESA budget to date as the largest contributor. This course must be ambitiously pursued in line with a significantly increased national budget for spaceflight. This will ensure that the German space industry is strengthened in the long term and that Germany will be able to remain a leader in this key technology area in the future.

Recommended measures:

1. SPACE TECHNOLOGY FOR ENVIRONMENTAL AND CLIMATE PROTECTION AND FOR THE CONSERVATION OF RESOURCES

German space technology is essential to protect our planet for future generations. Earth is a vulnerable habitat with limited resources. Only through the intelligent management of traffic flows, the deployment of space infrastructure in sustainable agriculture (smart farming) and the efficient management of land for energy production and distribution we can achieve short-term climate targets and conserve our resources. For this to succeed, we need seamless environmental and climate monitoring and satellite-based Earth observation through the continuous generation of global data sets, which must also be made available across borders.

WHAT IS NECESSARY?

- Creation of new climate and environmental missions at national and European level (ESA and EU)
- Promotion of leadership roles by the German space industry

2. SPACE TECHNOLOGY AS A KEY CAPABILITY FOR NATIONAL SOVEREIGNTY AND A CENTRAL PILLAR OF THE EUROPEAN SECURITY AND DEFENSE STRUCTURE

Space technology is indispensable for efficient risk and crisis management. Space has become an essential part of the independent state security architecture, and space technology contributes significantly to the sovereign ability of our decision-makers to act. Modern and autonomous space systems, space technologies and services from Germany ensure security on Earth, particularly within the context of international alliances such as NATO and the EU. They enable reliable worldwide communication with high resilience, high-resolution Earth observation in real time, exact simulation, monitoring of borders, and precise positioning, navigation and time signals, as well as location-independent cybersecurity, with the help of quantum technology and laser communication.

We are dependent on space systems. The corresponding infrastructure must therefore be managed sustainably and protected from external influences such as space debris and space weather effects.

WHAT IS NECESSARY?

- Anchoring spaceflight as one of the main pillars of national and European defense/security strategy and architecture
- Expanding and strengthening the key capabilities of the German space industry in the field of defense and security policy to reinforce national sovereignty, protect our space infrastructure and secure sovereign and independent access to space

3. SECURITY AND ENVIRONMENTAL PROTECTION IN SPACE AND NEW SERVICES

International regulation of space activities is essential to guarantee security. The increasing commercialization of space opens up new markets and offers a wide range of opportunities, including for German space companies.

At the same time, however, binding rules and international standards for the use of space are urgently needed. After all, security is a prerequisite for ensuring that European citizens, politicians and industry can continue to reliably

use the important space applications that have become an indispensable part of our everyday lives. To this end, the ability to determine the space situation (space situational awareness) must be ensured and the safe operation of the space infrastructure (space traffic management) must be regulated.

WHAT IS NECESSARY?

- Establishment of European and, subsequently, global space traffic management
- Measures to prevent and eliminate space debris
- Enhancement of national capabilities to observe the situation in space, including space weather observation, and to safely operate space infrastructure

4. CLEAR POLITICAL COMMITMENT FROM GERMANY TO TAKE AN ACTIVE LEADERSHIP ROLE IN EU SPACE PROGRAMS

Germany must take the lead in space policy. With the initiative Establishing Key Principles for the Global Space Economy, an important course was set for European spaceflight in the context of the German presidency of the European Council. The right decisions must now be made for a successful future space policy in an increasingly competitive global situation, so , with its strong economy, as the largest EU member and the largest ESA contributor, Germany can take a decisive role in shaping European spaceflight.

Open questions on governance between European Commission and ESA need to be clarified. ESA's programs with their secure geographic return principle are of great importance to the German space industry, as well as EU's competitive space programs, which include the Copernicus Earth observation program, the Galileo satellite navigation system and the planned new European flagship program for secure broadband connectivity. For the EU and ESA, access must be guaranteed equally and transparently for the entire industrial landscape, from start-ups and SMEs to suppliers and system houses, and clear roles must be defined.

WHAT IS NECESSARY?

- Strengthening the German role in EU space programs
- Support for the development of the new flagship program

5. A LEADING GERMAN ROLE AT THE NEXT ESA COUNCIL MEETING AT MINISTERIAL LEVEL, 2022+

The decisions of the ESA Council meeting at ministerial level set the sector's direction. More important than ever for Europe and Germany are independent access to space and sovereignty in satellites and launch vehicles, especially in a time of political upheaval. No other branch of industry stands for peaceful

international cooperation comparable to spaceflight.

The German space industry must be involved in the coordination process at an early stage. To ensure that Germany remains successful in all segments of the space value chain – from small and medium-sized enterprises (SMEs) to subsystem and system integrators – appropriate measures and development steps are of vital importance. The role of the ESA Council meeting at ministerial level is crucial not only for the European space industry but also for the advancement of German competencies in industry, science and research, which are of growing importance for the German economy. Accordingly, Germany's leading role in the ESA must be secured and expanded for the long term.

WHAT IS NECESSARY?

- Strategic expansion of the German leadership role and strengthening of the German contribution to the ESA budget at the ESA Council meeting at ministerial level in 2022, with early involvement of the German space industry.

6. APPROPRIATE FUNDING OF THE SPACE SECTOR IN GERMANY

The *National Program for Space and Innovation* forms the basis for Germany's international competitiveness. It serves to maintain strategic capabilities and to expand the technological leadership of the German space industry by supporting it with targeted programmatic funding and setting of priorities in individual technology areas. In addition, the program offers the opportunity to expand worldwide cooperation and strategic partnerships for the implementation of major international projects with German participation, in order to meet current and future environmental, transport, security and industrial-policy related challenges.

WHAT IS NECESSARY?

- An increase of the national program to €500 million per year initially in order to gradually reach the level of European competitors such as France and Italy.

7. INDUSTRY-FRIENDLY REGULATIONS AND STANDARDS THAT ENABLE GERMANY TO REMAIN COMPETITIVE

Institutional spaceflight is a state responsibility. It affects all federal ministries equally. In addition, commercial business models have increased significantly in recent years. The task now is to provide framework conditions and legal certainty for the German space industry and to promote commercialization opportunities even more intensively and in a more targeted manner. To this end, a Europe-wide legal framework must be developed that establishes

a level playing field and contributes to strengthening Europe's competitiveness in the global market. The interaction between research institutes and industry should also be regulated by a clear assignment of tasks and should ensure balanced competitive conditions. These measures will strengthen the German space industry and the competitiveness of German space companies – from system integrators to SMEs and start-ups.

WHAT IS NECESSARY?

- Establishment of a Europe-wide legal framework for the space sector.
- A level playing field for research institutes and industry.

8. A NEW SPACE STRATEGY 2021+

As a key sector, space is of central importance for Germany as a business location. The federal government's space strategy adopted in 2010 forms the basis for the German space policy. Through targeted further development of national capabilities, Germany has been able to achieve leading technological and scientific positions in recent years.

WHAT IS NECESSARY?

- Redrafting the German aerospace strategy 2021+ to take account of new developments – especially regarding new space (commercialization of space travel).

9. INTERDEPARTMENTAL COORDINATION OF NATIONAL, EUROPEAN AND INTERNATIONAL SPACE POLICY THROUGH A STRONG FEDERAL GOVERNMENT COORDINATOR OF GERMAN AEROSPACE POLICY

The Federal Ministry of Economic Affairs and Energy (BMWi) is responsible for aerospace funding. Other ministries have their own responsibilities and activities in the field of aerospace and provide their own budgets, which are in some cases considerable. Germany's federal states also pursue their own space activities. Bringing all this together effectively is the task of the federal government's Coordinator of German Aerospace Policy, based in the BMWi. The fact that the coordinator's area of responsibility has grown steadily in recent years underscores the success of German aerospace.

WHAT IS NECESSARY?

- Further strengthening of the function and responsibilities of the federal government's Coordinator of German Aerospace Policy.

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March 2021