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NOTE

From:	Presidency
To:	Permanent Representatives Committee/Council
Subject:	*Preparation of the Council ("Competitiveness") of 28-29 May 2018* **Future of the European Space policy** **-** Policy debate

I. Introduction

1. Space is an important, strategic sector for Europe and the EU's role in that sector has evolved significantly in the last decade by boosting scientific and technical progress, fostering industrial competitiveness, delivering job creation and supporting the implementation of Union policies.

   Space programmes contribute effectively to achieve a safe and secure Europe, a prosperous and sustainable Europe and a stronger Europe on the global scene.

The existing EU space programmes, Galileo, EGNOS and Copernicus, have made important progress as shown in their recent Mid-term evaluations[1]. These programmes must continue in a sustainable manner, responding to the evolving needs of their users and to the rapid technological changes affecting the sector. Additional activities are being discussed and may be needed, to respond efficiently and tackle successfully new challenges in the dynamic digital environment.

Space programmes require substantial long-term investments but the societal and economic returns are many times higher. The financial resources to be allocated to the space policy must be commensurate with the EU's ambitions on the global scene and should take into account the strong EU added value of these programmes, leading to significant cost-savings in public services at regional and national levels. Europe has achieved many successes in space with unique Earth observation and meteorology capabilities, world-class satellite navigation, telecommunications and launch systems.

2. Seven Earth observation Sentinel satellites are currently in orbit through **Copernicus**, continuously observing the Earth and producing terabytes of valuable data. Thanks to those capabilities Copernicus provides regular operational services on the state of the Earth's environment including its continents, its oceans, its atmosphere as well as their interface with human activity for the management of emergencies, security-sensitive situations or climate change.

1 Doc. 15299/17 (Council conclusions on "The Mid-term Evaluation of the Copernicus Programme)" and doc. 15435/17 (Council conclusions on "The Mid-term Evaluation of the Galileo and EGNOS programmes and of the performance of the European GNSS Agency"**).**

3. With the successful deployment and operation of twenty-two Galileo satellites, initial European satellite navigation services were declared already in December 2016, while preparation is underway towards providing enhanced services. The results on the market since then have been impressive. Over 75 million Galileo-enabled smartphones were sold last year. Major international manufacturers in ICT sector now offer Galileo-enabled products.

The European Geostationary Navigation Overlay Service (EGNOS) is benefiting numerous market segments, such as aviation, road, rail, maritime, surveying and mapping, location-based services and precision agriculture. All services provided by EGNOS are already fully operational and the number of users is constantly growing.

II. Dependence of the EU economy on Space

4. EU space programmes already deliver services that benefit millions of people. Space systems are essential to decision makers to respond to global challenges and deliver tangible results by strengthening the long-term competitiveness of our economy, supporting a well-functioning and efficient Digital Single Market, ensuring sustainable management of natural resource and tackling migration and climate change.

5. Space provides numerous benefits for society and competitive advantages for industry by being an enabler of new business models, fostering the development of high-tech and innovative capabilities and ensuring added values for many space-dependent sectors. Space technologies, data and services have become indispensable in the daily lives of European citizens: people and public authorities within the EU and around the world could observe the Earth with clarity, communicate with certainty, navigate with accuracy, and operate with assurance.

6. The part of the EU economy that is directly dependent on space infrastructure accounts for between 6 and 9% of Europe's GVA (Gross Value Added).

The European space economy, including manufacturing and services, employs over 230 000 professionals and its value was estimated at EUR 46-54 billion in 2014, representing around 21% of the value of the global space sector. Europe as a whole (including EU, ESA, Member States, EUMETSAT) represents today the second largest public space budget in the world[2] with programmes and facilities established throughout Europe.

The European space-dependent economy (all sectors combined) accounts for **around 14 million jobs** meaning that between 300 thousand to 800 thousand jobs would be at risk in the event of a loss of space assets. When European space downstream employment is taken into account, 500 thousand to a million jobs could be lost.

7. Dependence of the EU economy on space assets and activities includes also significant non-economic benefits such as:

   a) Environmental impacts: providing EU capabilities to respond effectively to environmental issues by helping to reduce environmental footprint of various industries (agriculture, transport, energy production) and ensure qualitative data for monitoring and taking actions for environmental protection;

   b) Social impacts: in addition to direct and indirect employment, space contributes to improving human health (e.g. through atmosphere monitoring), work conditions and safety of workers especially in sectors such as fishing and maritime transport; loss of space assets would influence negatively the electricity supply, access to information, safety of transport, prices for food and effective functioning of telecommunications;

   c) Strategic impact: key EU initiatives and security actors, including defence, rely on space assets and space-enabled solutions.

2 Consolidated space budget (Member States, EU, ESA and EUMETSAT) estimated at EUR 7 billion in 2015.

8. All of these data demonstrate clearly that the dependence on space assets of both EU economy and society is substantial and any loss of capabilities in that area would have an impact that would be felt across the entire economic value chain and would negatively influence the way of life of EU citizens. The Space policy has already largely proven its added value and its capacity to leverage the long-term investment made by the EU through its flagship space programmes and space research.

III. EU Space policy for the benefit of other major EU policies

9. Space technologies, data and services are embedded in the EU policies and key political priorities. All major EU policies are becoming space-dependent. Space is instrumental for EU sectoral policies such as the Digital Single Market and the Digital Agenda, the Common Agricultural Policy, Intelligent Transport Systems and road safety, environment and climate change, civil protection, humanitarian aid, maritime policy, border surveillance, security, defence as well as crisis management. Space policy will facilitate the implementation of the EU "Leaders Agenda"[3] as well as the commitments of the Rome Declaration[4] in particular as regards:

   a) *Digital Europe*: Space systems collect, generate and/or transmit data and therefore are becoming a crucial component for a Digital Europe. Space is an integral part of the development of future technologies and infrastructures: 5G, AI and data platforms, Smart Cities, autonomous vehicles, energy grids, agriculture, preserving cultural heritage;

   b) *Migration:* Copernicus services are used for border control, to detect migrant boats in distress and save lives, to check refugee camps status;

   c) *Climate Change:* Copernicus is already contributing to climate change policies, and in the future through the monitoring of CO_2 emissions, a key instrument in the implementation of COP21 commitments;

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3 http://www.consilium.europa.eu/media/21594/leaders-agenda.pdf

4 http://www.consilium.europa.eu/en/press/press-releases/2017/03/25/rome-declaration/pdf

d) *Security and Defence*: Space services can strengthen the EU's and Member States' capacity to tackle growing security challenges and improve the monitoring and control of flows that have security implications[5].

10. The global geopolitical and economic context is increasingly complex and challenging and therefore, the strategic relevance of space is growing. Space plays an important role in economic diplomacy and it is crucial that the Union seeks to establish a level playing field for the European industry.

IV. Space as enabler for Innovation

11. The space sector has been for decades a driver for scientific exploration, an enabler of cutting-edge technologies and a source of innovation that spreads to other economic sectors. Investing in space pushes the boundaries of science and research. Europe has a world-class space sector and therefore strengthening it by boosting space research and innovation is vital if Europe is to maintain and safeguard access to and operations in space.

12. The global space context is changing fast: competition is increasing; new entrants are bringing challenges and new ambitions in space; major technological shifts are disrupting traditional industrial and business models in the sector, reducing the cost of accessing and using space. The combination of space data with digital technologies, Artificial Intelligence and other sources of data opens up many business opportunities for all Member States.

V. Widening the opportunities of space across the EU

13. The following elements have to be taken into account to maximise the benefits of space for all.

a) **Long-term stability** is essential to guarantee the continuity of public infrastructures and services and maximise the return on investments already made. Further synergies between programmes should be explored to reap increased benefits of EU's investments;

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5 As emphasised in 'A Global Strategy for the EU's Foreign and Security Policy' issued in June 2016 by the High Representative of the Union for Foreign Affairs and Security Policy and Vice-President of the European Commission.

b) The EU space programmes are **user-driven** and provide essential public services to the benefit of citizens, business, and public entities at regional, national and EU level. This user dimension should be further strengthened in the overall governance and delivery of the programmes, in order to maximise the use of data and services across Europe;

c) **A comprehensive space policy** is needed to promote industrial competitiveness, innovation and the **widest possible participation of actors from all EU Member States,** including new entrants and SMEs, in order to create the highest possible benefits to society and economy. This should include capacity building measures to ensure that benefits of the EU space investments are shared by all Member States;

d) The EU space programmes should, whenever possible, make **best use of existing assets and capacities** in the Member States, or in cases where this is feasible, advantageous to the programmes and does not pose security risks, in the private sector. Cohesion and cross-border cooperation should be boosted and enhanced. Continued **investments in research, technological development and innovation** underpin the success of all EU space programmes and the competitiveness of the European space industry. For strategic areas and critical technologies new approaches based on roadmap-based research involving all stakeholders are necessary to create the needed impact.

e) Maintaining an appropriate level of **European autonomy** is a leading principle for the EU space policy in order to **maintain and further strengthen its world-class capacity and capability.**

f) Europe needs to speed up its action for the **competitiveness of the whole supply chain and actors**, from industry to research organisations, and address the vulnerability of European supply chains by supporting the development of critical space components, systems and technologies associated with technological non-dependence.

g) Europe needs to **keep pace with the increasing global competition**; new entrants are bringing challenges and new ambitions in space; major technological shifts are disrupting traditional industrial and business models in the sector, reducing the cost of accessing and using space. The EU should seek to support international cooperation efforts and create **market opportunities for European technology, services and products on the global markets.**

VI. QUESTIONS FOR THE POLICY DEBATE

Member States are invited to exchange views on the following questions with regard to the future of the European Space Policy:

1)	***What are the policy measures and actions which the EU and Member States should undertake in order to maximise the achievements of EU space policy, strengthen investments and encourage innovation, in order to unleash the full potential that space can provide in the future?***
2)	***How can we increase awareness about the benefits of space for the citizens and the economy across all market sectors, including EU industrial and Single market policies?***