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European Space Governance: The Outlook

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Space Policy Program



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PROMOTING COOPERATIVE SOLUTIONS FOR SPACE SECURITY

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INTRODUCTION

The Ifri/SWF conference of 13 September 2011 provided an overview of the evolution of European space governance. It was convened almost two years after the adoption of the Lisbon Treaty and five months after the release of the European Commission (EC) Communication on a future European space strategy¹. The space governance debate in Europe is very passionate, as it touches upon the highly sensitive questions of sovereignty and power-sharing. Thus, the desired outcome of the event was to create a balanced view on European space governance, taking full account of the issue's complexity.

How to define European space governance?

European space governance is indeed at the core of the debates on the future of the European Space Policy (ESP). A multifaceted concept used in a wide variety of areas, governance is difficult to grasp and to define. At a very generic level, European space governance can be understood as “the combination of legal norms that emanate from international, European and national legal frameworks which, together, organize a coherent European decision-making process in both space policy and programmatic activities”². This definition highlights the complexity of the issue, as European space governance is at the crossroads of policy (it is linked to the substance of space programs), politics (it has to set institutional “rules of the road”) and polity (it has to accommodate several tiers of actors).

Why does European space governance matter?

The space governance debate gained ground in the beginning of the 2000's, when the political relevance of outer space became more obvious to European political decision-makers³. This trend was reflected both by the rise of the European Union (EU) as Europe's second major institutional actor in space besides the European Space Agency (ESA) and by the emergence of a new category of actors, namely space users. As a consequence, two

¹ European Commission. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions. Towards a Space Strategy for the European Union that Benefits its Citizens. Brussels, COM(2011)152, 4 April 2011.

² Mazurelle F, Wouters J, Thiebaut W. The Evolution of European Space Governance: Policy, Legal and Institutional Implications. Working Paper No. 25. Leuven: Leuven Center for Global Governance Studies; April 2009, p.8.

³ A landmark document in this respect is the so-called “Wise Men Report” from 2000: “Towards a Space Agency for the European Union. Report by Carl Bildt, Jean Peyrelevede, Lothar Späth to the ESA Director General.”

central challenges arose for the future of European space governance. First, the contrast between the relative homogeneity and unity of the technological basis (the European space industry) and the diversity of end-users. Second, the potential gap between the recognized technical and industrial potential of Europe in space activities and a lack of political will to develop an adequate space policy⁴.

As a starting point for the conference, the current governance architecture was briefly recalled. The core of it is constituted by the so-called “Governance Triangle”, composed of ESA, the EU, and individual states. Despite a strong focus often put on ESA/EU relations, it is important to keep in mind that European space governance is essentially of intergovernmental nature. As such, individual states still remain at the center of activities, and still represent the main decision-making actors. However, the Lisbon Treaty could potentially become a game changer, as it dubbed space a shared competence between the EU and its member states⁵.

Overall approach of the conference

The conference was held under Chatham House Rules⁶, and gathered recognized space policy experts, high level representatives from various public institutions (European Commission (EC), ESA, European Defence Agency (EDA), European External Action Service (EEAS), national space agencies) as well as representatives from the private space sector to discuss the major governance challenges ahead. The conference featured three panels and a keynote speech on the EU proposal for a Code of Conduct (CoC) for outer space activities. The first panel focused on crosscutting issues, including the policy implications of the Lisbon Treaty, the legal framework of space activities in Europe, the financial sustainability of space programs, and procurement rules. The second panel analyzed the impact of the above-mentioned broader trends on specific programs such as Galileo/EGNOS (European Geostationary Navigation Overlay System), GMES and MUSIS (MULTinational Space-based Imaging System). The last panel shed light on specific actors including: national space agencies, EDA and entities involved in EU external actions.

As a whole, the conference first identified the main structural obstacles in the current European space governance architecture. Second, it focused on the improvement of governance, its link to the existence of an overall political will, as well as the necessity of the debate to be framed in a broader European political context. Finally, a number of tailored and

⁴ Gaubert, Alain and Lebeau, André. Reforming European space governance. *Space Policy* 25 (2009), p. 37-44.

⁵ Specifically, Art. 4(3) of the TFEU reads as follow: “In the areas of research, technological development and **space**, the Union shall have competence to carry out activities, in particular to define and implement programmes; **however, the exercise of that competence shall not result in Member States being prevented from exercising theirs.**” (emphasis by the authors).

⁶ The presentations of the following speakers are available on the websites of both institutions (<http://www.ifri.org>; <http://swfound.org>): Josef Aschbacher (ESA), Gérard Brachet (Consultant in space policy), Maria Buzdugan (European Commission), Rik Hansen (Leuven Catholic University), Jan Kolar (Czech Space Office), Tanja Masson-Zwaan (Leiden University), Gaëlle Michelier (European Commission), Christophe Venet (Ifri).

incremental solutions were suggested to improve future European space governance, thus reflecting a pragmatic rather than an ideological approach.

IDENTIFYING STRUCTURAL OBSTACLES

The funding issue

The origin and sustainability of funding is a key issue for the future of the ESP. In the commercial world, the financial sustainability of satellite projects is conditioned by three key factors: a steady cash flow (implying the existence of a viable market), the reduction of construction risks (implying reliable satellite manufacturers, reliable launch providers and the ability to cover significant initial expenditures) and the reduction of regulatory risks (implying compliance with domestic and international regulatory rules). However, only a fraction of the space sector is sustainable on a purely commercial basis (mainly in the field of satellite telecommunications). In most other cases, commercial rules do not apply, and there is a need for strong public backing. Therefore, it is crucial both to maintain a constant flow of funding (to ensure the continuity of operational services) and to keep costs under control (to avoid the political difficulties associated with cost overruns).

The issue of funding was particularly discussed in the cases of Galileo and GMES. The European GNSS (Global Navigation Satellite System) program first, is reflective of the tremendous challenges of a sustainable funding. After the failure of the initial Public-Private Partnership (PPP), it was reoriented towards a fully publicly funded endeavor in 2007. However, the €3.4bn spent so far were only to cover the definition, validation and deployment phases until 2013. Starting in 2014, the exploitation costs were estimated by the EC at around €800m a year. Considering GNSS applications a public service, the EC proposed to allocate €7bn to the program for the next Multiannual Financial Framework (MFF)⁷. During the meeting, participants also recalled that the expected indirect benefits (socio-economic benefits) will by far surpass the future direct revenues. One of the consequences of this is that Galileo/EGNOS will much likely not be profitable enough to be operated on a commercial basis. This was presented as an additional reason to keep a strong public financial commitment over the entire duration of the program.

As for the second flagship of the ESP, the decision of the EC not to include GMES in the next MFF was a concern for most in the audience. It was in particular recalled that the development of the GMES Space Component (GSC) is largely within schedule and budget, which makes the EC proposal all the more paradoxical. ESA representatives indicated that the figure of €834m a year laid down by the EC for the GMES operational phase was realistic. However, they also underlined that GMES should be funded within the MFF. An

⁷ European Commission. Communication from the Commission to the Council, the European Parliament, the European Economic and Social Committee and the Committee of Regions. A Budget for Europe 2020. Brussels, COM(2011)500 final, 29 June 2011.

opposite decision would mean a discontinuation of GMES, it would lead to past investment being lost⁸. However, the EC proposal for the next MFF is only at a very preliminary stage, and the Council and the Parliament still have room to modify it.

A clear political guidance is essential

Conference participants made clear that a strong public commitment to the ESP is needed, in particular from a financial perspective. This in turn implies the existence of a strong political will, materialized in a coherent space policy, as well as clear political guidance to implement such a policy, in form of a detailed space strategy. Conference participants pointed out that governance is mainly a tool that has to be tailored to reach specific political goals. These political goals constitute the substance and the *raison d'être* of the ESP. Thus, it is important first to identify and define these main political goals, and second that all European stakeholders (in particular individual member states) stand united behind them. Several of these political objectives of the ESP were mentioned: promoting scientific and technological progress, fostering innovation and industrial competitiveness, developing space applications for the benefit of European citizens, strengthening the European identity on the international stage. This coherent approach is not always there. Independent access to space was finally identified as the central political requirement enabling all the other objectives.

To reach these goals, it is important to develop a competitive European space industry and to invest in space-related research and innovation. A keyword that was extensively discussed in this respect is European non-dependence in critical technologies (such as semiconductors). Indeed, no ambitious ESP could be developed without a strong political commitment to strategic non-dependence. As a whole, the discussions made clear that the European space governance debate should be subordinated to the general political consensus on the ESP.

However, such clear political guidance is not always given, as illustrated by two examples which were extensively discussed. The first one was GMES, as recent developments created a sense of uncertainty about the future of the program. Potential end-users in particular, need a clear political commitment guaranteeing the sustainability of GMES. It was pointed out that this situation leads to contradictions, given the number of political statements issued in the past years by various European stakeholders, dubbing GMES an absolute priority of the ESP. Participants also mentioned the example of international cooperation in space, where no clear political strategy is yet identifiable. The ultimate policy objectives of international cooperation are not explicitly stated in the ESP. Important issues such as whether or not to engage with China in cooperation endeavors had not been clarified.

⁸ This analysis was produced by the EC itself, in weighing the future funding options for GMES. European Commission. Commission Staff Working Paper. A Budget for Europe 2020: the current system of funding, the challenges ahead, the results of stakeholders consultation and different options on the main horizontal and sectoral issues. Brussels, SEC(2011)868 final, 29 June 2011.

A large number of stakeholders

A further important challenge lies in the large number of actors and stakeholders involved in European space governance, and in the diversity of their approaches, interests and capabilities. Besides the three main stakeholders (ESA, the EU and the member states), other actors may become increasingly involved in the ESP. Examples could include Eurocontrol or the European Aviation Safety Agency (EASA), in view of developments in the fields of space tourism or space traffic management.

It is also important to keep in mind that the major players are themselves composed of several tiers of sub-actors. In the case of the EU for example, the EC and the Council have always played a central role in the shaping of the ESP. Other actors, such as the European parliament (EP), the EEAS or the EU Satellite Center (EUSC), could gain importance as well in the years to come. At the level of member states then, governmental actors, such as ministries or national space agencies are coexisting with national parliaments, industrial actors or SMEs.

As a matter of fact, the conference put a specific focus on space governance at the national level. Internal coordination and coherence among all space-related actors at the national level is indeed crucial. This is particularly true for member states with a smaller space heritage (such as Eastern and Central European countries). Space activities place several challenges on national actors: limited financial, technological and scientific capabilities have to be mobilized in the most efficient way. National space agencies have a central role in shaping these national space policies. At the same time, they should adapt to some structural changes. Indeed, space activities nowadays cover incomparably more areas than two or three decades ago, when they focused mainly on scientific activities. As a result, national space agencies in smaller spacefaring nations should be focusing on two core tasks: developing cutting-edge R&D programs and supporting governmental users of space applications.

Furthermore, it is important for nations to speak with a single voice in international forums, in order to push their interests efficiently. This is particularly the case for smaller and recent ESA member states. As such, the principle of georeturn (also called *juste retour*) was also discussed, being at the core of the interplay between ESA and its member states. In fact, georeturn still remains the main incentive for smaller member states to participate in ESA activities, and thus to be part of the ESP effort. At the same time however, the georeturn principle is clearly at odds with EU liberal competition and procurement rules.

A heterogeneous legal framework

Another problem is the heterogeneity of the legal framework for space activities in Europe. For example, some states ratified the space treaties, agreements, and conventions while

others did not⁹. ESA made a declaration of acceptance of three treaties¹⁰, but the EU did not. This situation could lead to some problems, in particular regarding liability issues. Another potential problem is linked to national space legislations. Only three states have enacted comprehensive space legislation (France, Belgium and the Netherlands)¹¹. These space acts focus mainly on liability and launch authorization, and licensing issues. Several other European states are actively pursuing space activities, but have no adequate national legal framework. Although those European states that enacted space legislations shared information on an informal basis, there is currently no European-wide homogeneity in terms of space-related national legal frameworks. In addition to these concerns at the national level, ESA and the EU also have a different legal framework (the EU has regulatory powers, but ESA does not) and are, thus, subjected to different rules - this is particularly striking in the case of procurement rules. These aspects remind us that governance is not only about settling political divergences, but also about crafting a common legal framework for the ESP.

TAKING STOCK OF THE BROADER POLITICAL FRAMEWORK

Space is a strategic sector for Europe

It seems difficult to discuss the future of European space governance without taking into account the broader political context, both at the European and international levels. Strictly considered, space is a relatively small sector of activity. The European space industry has a turnover of about €6bn a year, it employs 36.000 people and around €700m are invested every year in R&D activities. As a comparison, 12 million jobs depend on the European car industry, which has an annual turnover of €850bn and invests €22bn per year in R&D. However, conference participants highlighted that space is a strategic sector for Europe, as it is essential for growth (as a driver for innovation and competitiveness in high-tech sectors) and for the proper functioning of the whole society (through the contribution of satellite applications to “earthly” policies). It contributes to other EU policies, such as the Europe 2020 strategy or the Common Security and Defence Policy (CSDP), and it provides new tools to the European diplomacy. As such, the ESP can only be conceived in the broader European political framework. It is important to keep this in mind for the development of a coherent and efficient European space governance architecture, knowing that these structural political factors can both enable and constrain.

⁹ Specifically, Estonia, Latvia, Lithuania, Malta and Slovenia did not ratify the 1967 Outer Space Treaty.

¹⁰ These are the Astronauts Agreement, the Liability Convention and the Registration Convention.

¹¹ These space legislation acts cover both authorization and liability issues. Other European states enacted space legislation acts with a narrower scope (such as Sweden, Germany or the UK for example).

The international dimension of outer space

The ESP is also contributing to Europe's foreign policy goals, and is thus linked to Europe's leadership on the international scene. There are several ways in which space can contribute to Europe's external action. Europe can interact with third parties in the framework of specific programs, such as Galileo or GMES. The partnership forged with Africa within GMES is a perfect demonstration. Space research activities constitute another point of convergence between space and international activities. Certain space-related FP7¹² projects are indeed open to non-EU parties, and countries such as Russia are regularly participating in such endeavors. Space exploration is another area where Europe is actively engaged, and is currently trying to set up a high-level forum for international cooperation. Finally, space also adds new possibilities to European diplomacy in general, as it can be brought to the table among other topics in the framework of broader negotiations or dialogues with third parties. The Lisbon Treaty represents an important step forward in this regard, as the debate on space as a tool of European foreign policy can be moved to a higher political level within the EU. At the same time, from a governance perspective, there needs to be a smooth coordination between the EC and EU member states. As a matter of fact, the EC enjoys full support from EU member states in its space diplomacy activities.

Another important issue where space and international affairs intersect is the CoC. The EU proposal for a CoC was negotiated internally among the 27 EU partners¹³ before being presented to the international community by the EEAS. It is an example of a coherent and effective approach, both from an institutional and from a political perspective. Indeed, the CoC is a major diplomatic initiative to promote transparency and confidence building measures, and its adoption would strongly foster Europe's credibility and leadership on the international scene. Conference participants discussed how the CoC is being promoted by the EU and how major and emerging spacefaring nations are consulted. They also acknowledged that the EU received mixed signals from the international community, in particular from certain developing nations who see the CoC as a way for established spacefaring nations to impose constraining rules to newcomers.

The security implications of space

The ESP has strong security implications, which have to be taken into account when analyzing European space governance. Indeed, space is potentially a central tool for the CSDP. At the same time, strategic and security-oriented concerns can guide developments in space (the best example is the need for Europe to become independent in the field of critical technologies). Among the constellation of space-related institutional actors in Europe, EDA's role is growing. It is the only EU agency mentioned in the Lisbon Treaty, thus giving it a strong political backing. EDA is not a space agency, but rather a capability-driven institution

¹² FP7 is the Seventh Framework Programme for Research and Technological Development, the EU's main instrument for funding research in Europe. It runs over the period 2007-2013.

¹³ A specific working group was created for this purpose within the Council of the EU.

whose main task is to coordinate R&T efforts in the European defense sector. As such, it can be a useful interface between national defense institutions and other non-defense specific institutions such as EEAS, the Council or the Crisis Management and Planning Directorate (CMPD). In the space area, EDA is involved in military satcom projects and in the Space Situational Awareness (SSA) program. As a whole, the increasing role played by EDA in the European space governance architecture is reflecting the growing role of security and defense issues in the ESP.

Defense is also a policy field where cooperation among several European partners is more difficult. MUSIS was presented as an illustration of this, being described as “the failure of the intergovernmental approach”. The project was originally launched in the early 2000’s, when a so-called “meta-European system” was envisaged. Such a system was supposed to be based on previous bilateral cooperation endeavors, between France and Germany on the one hand (Helios-SAR Lupe) and France and Italy on the other hand (Helios-Cosmo Skymed). Several other partners, such as Greece, Belgium, Sweden or Poland were to join. Despite years of negotiations among the partners however, they reached no final agreement and the MUSIS effort was considerably slowed down. This failure shows that sovereignty issues still play a major role in purely military programs, which also has obvious implications for a common European approach to space security.

DEVELOPING TAILORED SOLUTIONS

Considering the complexity of the current governance framework, the existence of structural obstacles, and the constantly evolving political context, the conference participants suggested several concrete tailored solutions to specific problems or issues.

A toolbox for space procurement

In the field of procurement policy, the idea of a flexible toolbox was presented, moving away from a “silver bullet” approach for space procurement in Europe. To understand the underlying difficulties linked to procurement policies, it is first necessary to focus on the specificities of the space economy. The space industry is a very small market, where R&D costs are very high because of the long development cycles and the use of cutting-edge technologies. In addition, the cost of access to space is still a major obstacle to a broadening of commercial space activities. Finally, space assets have a strategic value for states. A logical consequence of these characteristics is the strong public involvement in space activities, among others through public procurement schemes. However, given the diverging legal rules framing EU and ESA activities, public space procurement has become one of the most sensitive issues within the discussion on European space governance.

The results of a recent study on space procurement rules¹⁴ were then discussed by the conference participants. The study took a pragmatic approach, viewing procurement essentially as a tool rather than an end. It conducted a legal analysis, a market analysis, stakeholder consultations and it made a thorough examination of existing instruments. As a result, it proposed a series of 27 specific tools adapted to the specificities of the European space market, taking into account the market segment, the policy objectives or the legal environment of a given procurement scheme. This pragmatic approach clearly reflects the potential benefits of a staged and pragmatic approach in space governance matters.

An incremental approach for the two flagship programs

A flexible approach was also advocated for the future operational phase of the two flagship programs Galileo/EGNOS and GMES. As for the former, different approaches were advocated for Galileo and EGNOS, as both programs are at varying stages of their development. EGNOS, a regional complement to GPS (Global Positioning System) has been operational since 2009, and a solution regarding its operational ownership has to be found rapidly. It was developed by ESA, transferred to the EU, and is currently operated by a technical operator contracted by the EC. Considering that the EC is probably not equipped to provide EGNOS services on an operational basis, an entity able to take these responsibilities should be identified. Among the various institutions that could take over this role, Eurocontrol was suggested as the most suitable candidate as it has already gathered the necessary experience and expertise as an operational agency under delegation from the EU. For Galileo, there is still enough time to build up the necessary expertise to operate the system. GSA could be a candidate to eventually provide Galileo operational services. In this case, it would seem wise to devise a dedicated development plan with a political mandate from the Council in order not to repeat the mistakes made during the concession phase. Concerns were raised by the participants that the management of two related programs by separate entities could prove burdensome. However, participants agreed that the situation is no different in the U.S., with the Department of Defense (DoD) managing GPS, and the Federal Aviation Administration (FAA) managing the U.S. equivalent of EGNOS, the Wide Area Augmentation System (WAAS).

For GMES, adaptability and flexibility are also keywords for the future governance architecture of the system, as each component¹⁵ will be governed by a different governance scheme. Specifically, the EC leads the Services component, ESA leads the Space component and the European Environment Agency (EEA) leads the In-situ component. In addition, there is a difference between the overall governance of the program, which remains

¹⁴ Hobe, Stefan/Hofmannova, Mahulena/Wouters, Jan (eds). *A Coherent European Procurement Law and Policy for the Space Sector. Towards a Third Way*. Cologne Studies in International and European Law. Berlin: LIT, 2011.

¹⁵ GMES is composed of three components: the Space component (the Sentinel satellites, the contributing missions and the associated ground infrastructure), the Services component (information services for land, marine, atmosphere, emergency, security and climate change) and the In-situ component (land, air and water monitoring sensors).

under the responsibility and guidance of the EU, and the governance of the GMES Space Component (GSC), where ESA should play the central role. Indeed, as a program that will contribute heavily to public policies in fields such as security, emergency response, disaster management, climate monitoring or agriculture, it seems natural for the EU as the major political actor in Europe to lead GMES. Similarly, ESA has a wide experience in the management of space programs (in particular in the field of R&D), making it particularly suitable for a strong involvement in the Space component.

Pragmatic solutions for military space governance

The conference also explored some security-related aspects of the ESP. One key point of discussion was the militarization of the ESP and the fact that it is not incompatible with the peaceful purposes approach advocated by Europe in space. Moreover, participants agreed that the term “peaceful” should indeed be interpreted broadly as “non-aggressive”, which goes beyond the restrictive interpretation of “strictly civilian.” As a consequence, pragmatic suggestions were made regarding military programs. A special focus was put on EDA, as this organization is characterized by its flexibility. As a capability-driven agency (i.e. guided by customer requirements), EDA can offer tailored arrangements to its member states. It can be conceived as an instrument for its member states to explore synergies in the European defense sector. Specifically, it aims at developing and extending the pooling and sharing of military assets in the space sector. EDA’s work in the field of military satcom requirements at the European level is a concrete example of the potential benefits of such a tailored approach. As a matter of fact, a common European miltatcom procurement cell is to become operational by 2012.

The importance of other space-related institutions in the overall security architecture of the ESP was also discussed. A more prominent role could for example be given to the EU Satellite Center (EUSC) in the GMES and Space Situational Awareness (SSA) programs. Indeed, EUSC has build up strong ties with its member states in the security field, and this expertise could be used to develop the relations with the GMES and SSA-related security communities.

Despite these interesting initiatives, most conference participants also recognized that the security aspects of the ESP are not very developed yet. This can probably be traced back to broader political issues at the European level, security and defense traditionally being very sensitive topics among EU member states.

CONCLUSION

Debates at the conference reminded us that European space governance is a complex issue with multiple layers spanning national, intergovernmental and supranational levels with international implications.

Discussions explored the political, financial and programmatic facets of this issue. Thus, they contributed to a better identification and understanding of the shortcomings, obstacles and constraints of the existing governance framework. At the same time, the day offered prospects for improvement, identified the primary challenges, and even proposed some potential solutions for concrete problems. All in all, the discussions illustrated the fact that improving the European space governance architecture is a slow and iterative process, and can only succeed based on a pragmatic approach and a strong political consensus on the central objectives of the ESP as a whole.