

Strategic space autonomy for EU political and security goals. Evolution of organisational capacity¹

Irma Słomczyńska, *Maria Curie-Skłodowska University in Lublin (Poland)*

E-mail: irma_slomczynska@interia.pl

ORCID ID: 0000-0001-7805-8139

Abstract

The aim of the article is to analyse the European space policy as a unique and innovative undertaking established within the European Union in order to acquire its strategic space autonomy. The European space policy evolution as well as its implementation and space assets being at the EU disposal, are key enablers of the EU space autonomy. The main assumption of the article is that the EU pursues a strategic autonomy in space because it is indispensable to achieve a strategic autonomy in almost all the realms including security and political ones. That is why European space policy was introduced and a key space programmes including *Copernicus* and *Galileo* were initiated. As a result, the EU joined the group of space-faring powers as an influential global player that makes an additional considerable contribution to the structural changes in outer space governance. A qualitative approach used to analyse this topic should lead to several findings. A strategic space autonomy, which is crucial for the EU to perform its multiple roles, could be grouped into three functional levels: institutional, systemic, and military.

Keywords: European Union, European space policy, autonomy, strategy, security, Copernicus, Galileo, outer space governance.

Strategiczna autonomia przestrzeni kosmicznej na potrzeby realizacji celów politycznych i bezpieczeństwa UE. Ewolucja zdolności organizacyjnych

Streszczenie

Celem artykułu jest analiza europejskiej polityki kosmicznej jako unikalnej i innowacyjnej aktywności podejmowanej w Unii Europejskiej w celu uzyskania strategicznej autonomii kosmicznej. Ewolucja europejskiej polityki kosmicznej, jej wdrażanie i zasoby kosmiczne, będące w dyspozycji UE, są kluczowymi czynnikami zapewniającymi autonomię kosmiczną UE. Główne założenie tego artykułu jest następujące: UE dąży do strategicznej autonomii w przestrzeni kosmicznej, ponieważ

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jest ona niezbędna do osiągnięcia strategicznej autonomii w prawie wszystkich innych dziedzinach, w tym w dziedzinie bezpieczeństwa i polityki. Dlatego ustanowiono europejską politykę kosmiczną i zainicjowano kluczowe programy kosmiczne, w tym Kopernik (*Copernicus*) i Galileusz (*Galileo*). W rezultacie UE dołączyła do grupy mocarstw kosmicznych jako wpływowy gracz globalny, który wnosi dodatkowy, znaczący wkład w zmiany strukturalne w zarządzaniu przestrzenią kosmiczną. Podejście jakościowe zastosowane do analizy tego tematu pozwoliło na sformułowanie konkluzji, że strategiczna autonomia przestrzeni kosmicznej, która ma zasadnicze znaczenie dla UE w realizacji jej wielu ról, jest istotna przynajmniej na trzech poziomach funkcjonalnych: instytucjonalnym, systemowym i wojskowym.

Słowa kluczowe: Unia Europejska, europejska polityka kosmiczna, autonomia, strategia, bezpieczeństwo, Kopernik, Galileusz, zarządzanie przestrzenią kosmiczną

The space policy of the European Union is a multidimensional and long-term planned policy of intertwined processes and political, economic and social ideas characterised by complex dynamics, taking place in a multipolar world (Remuss 2018). This is an example of a unique European policy because it is aimed at, implemented with and planned for the EU Member States, non-EU countries, European space-faring states, space-faring powers as well as countries with growing aspiration in space (Madders 1997). In this way, the European Union not only carries out political activities in Europe, formulating strategies and objectives on the global level but also provides stimuli for the development of space services market and European space industry as well as contributes to structural changes in outer space governance, providing space services such as the Galileo satellite navigation signal or Copernicus (Antoni et al. 2019). Space assets and services have become strategically important to the European Union since the 1990s, and all the EU objectives would not be achieved without access to space. Nevertheless, the purpose of European space assets, apart from the commercial one, seems unclear, especially when space is becoming a more contested environment than in the 20th century. When traditional competitors, namely space-faring powers, could be easily identified, new actors, both private and public, are launching their spacecraft. Therefore, possible space jams, fragments of space debris, as results of multiple collisions, are emerging around the globe, in part spurred by the reduced costs of developing and launching satellites. Moreover, growing technical capabilities, both to observe from the orbit, and to interfere with spacecraft call for greater flexibility and agility in policymaking on the European level.

The aim of this article is to analyse the elements and function of autonomy in the space policy of the European Union. It also analyses the justifications, development, mechanisms, and effectiveness of the selected space projects for autonomy as well as changes suggested in the new industrial strategy for Europe. The analytical eclecticism approach will be applied to study the topic (Sil, Katzenstein 2010). Apart from qualitative approach some elements of text and network analysis will also be used (Pomeroy 2019) as well as neo-institutionalism, especially rational-choice institutionalism, historical institutionalism and sociological institutionalism that are indispensable to analyse and understand the organisational and institutional evolution of space policy of the EU (Ryan 2019).

In order to meet the aims of the research on strategic space autonomy for the EU, the following research questions were formulated: how strategic autonomy in space is defined; why strategic autonomy in space is important for the EU; how institutional framework and technology impact the EU's strategic autonomy in space; whether strategic autonomy in space underpins EU security; how the Member States' space resources improve strategic space autonomy of the EU?

In search of European strategic autonomy in outer space

Space autonomy should be understood from the perspective of European strategic autonomy, as announced in Commission's communication *A New Industrial Strategy for Europe, COM(2020) 102 final*, released in March 2020. Such autonomy has been defined as reducing dependence on others for things that the EU needs the most, namely, critical materials and technologies, food, infrastructure and security. It also "provides Europe's industry with an opportunity to develop its own markets, products and services which boost competitiveness" (European Commission 2020). Strategic autonomy, from analytical point of view, can be accessed through the development of key enabling technologies such as robotics, microelectronics, high-performance computing and data cloud infrastructure, biomedicine, nanotechnologies, pharmaceuticals, and also space assets, which are essential for Europe's future. Such assets are synergetic by nature, and could support "the development of innovative products and services, including the emergence of cutting-edge innovative technologies" (European Commission 2020). It is worth adding that the EU declares that by this synergy between defence, space, and industrial sector the EU will be able to use resources more efficiently. As a result, by pooling and strengthening space assets the EU can create economies of scale. Some authors understand space autonomy by broadening perspective on autonomy "by taking a closer look at the linguistic, philosophical and conceptual mechanics that operate behind this reference to autonomy" (Wouters, Hansen 2015). Therefore, the question of space autonomy can include a variety of other concepts such as autarky, interdependence and non-dependence, taken from the traditional paradigms of international relations (Mutschler 2015). These findings, while interesting from the theoretical point of view, omit evolutionary characteristics of European space autonomy, and a simple fact, that space autonomy on the European level has been always linked with military aspirations of European leaders.

Is the pursuit of autonomy in space also the pursuit of European security? In the nineteen seventies and eighties, when ESRO and ESA were discussing the need for European independence from space powers, security was primarily economic. The American monopoly on the launch of satellites limited European capabilities, and moreover, the costs were imposed by the American partner. Currently, when satellite techniques include both satellite imaging as well as remote sensing and satellite navigation, the economic dimension of European security in terms of space policy has significantly expanded. Ecological, energy, technological as well as social security related to border control and the availability of satellite navigation signal should also be taken into account. Moreover,

the security of soldiers on European Union missions is also expanded thanks to the use of satellite techniques. Thus, as the technological factor has become an important determinant of a significant part of European Union policies, the demand for an autonomous European space policy has increased.

Adopting a perspective, in which the logic of the European Union would correspond to the concept of action of a state or a space power participating in the race to gain control over space would, however, mean the necessity to exclude from the analysis of European integration processes occurring not only within the European Communities, but also in the Western European Union (WEU), and above all the European Space Agency (ESA). Therefore, it should be assumed that space policy corresponds to the logics of European integration, and this is demonstrated by the actions of Parliament and the activities of the European Commission in the form of a space strategy or industrial strategy. As space resources are owned by the Member States, it would be natural for them to halt the deepening of integration in space exploration or to attempt to take control of the political process. However, history shows that this is extremely difficult, but not impossible, and partly space policy can be an example of the Commission's erroneous actions, as was the case with the Galileo Joint Undertaking. The situation may be similar to Euratom, where the Member States continue to exercise control over the Treaty. However, space policy is not as sensitive a topic as nuclear energy and the ideas and slogans associated with space exploration are positive. Thus, there is no need to enter into political disputes, such as those related to nuclear energy, involving a significant part of society, not just groups directly involved in building the agenda. However, in case of use of nuclear energy, where this is a case study used to analyse the building of agencies at the national level, and as some authors note, this has a large impact on the overall policy of the state in the long run (Baumgartner, Jones 2009: p. 60). Nevertheless, the issue of nuclear energy is, in most cases, an example of failure rather than building an effective agenda (Campbell 1988; Mounfield 1991; Weart 1988). It is important to mention that the European programme for building a nuclear energy community has not met with much interest. This issue remains depoliticised, as evidenced by the failure to include the Treaty on the European Atomic Energy Community in the TEU or TFEU, which means that Euratom now has an "ambiguous position" in the EU treaty structure, in fact functioning as a separate organisation with a separate legal personality. Such a solution, according to Marise Cremona, may result from uncertainty about the future of Euratom and in her opinion it is much easier to make changes in the functioning of this organisation, because a different path would require a revision of the treaties (Cremona 2012: p. 60). However, since all decisions taken in the political system of the European Union have conditions, one can risk the thesis that leaving control over Euratom to the Member States creates a specific sectoral policy within the EU structure. A similar situation occurs in the case of European space policy, where ESA is the executor of European policy. Nevertheless, the decision taken in 2018, to create the European Union Agency for the Space Programme provides further autonomy from an institutional point of view (Proposal for a Regulation 2018/0236).

European space assets and security agenda

The strategic conditions of the European space policy, defining the possibilities and goals of using European space resources, are consistent with the assumptions of the global strategy for the foreign and security policy of the European Union. This is important because in the strategy adopted from June 2016, space resources are indicated in the first group of instruments necessary to ensure the security of the European Union and achieve the strategy's objectives. These instruments at the moment are space navigation system Galileo, and space imagery assets Copernicus, but such space assets are not enough to achieve space autonomy. First of all, it indicates the need to develop satellite communications, ensure autonomous access to space and constant observation of the Earth. This approach was confirmed in the Council's conclusions of November 14, 2016, where it was pointed out that Europe should allocate adequate resources to the development of space resources necessary to ensure security (Council of the European Union 2016: p. 8). This is in line with the Commission communication, in which the European Commission has attempted to introduce the defence and security sector of the concept of efficiency and competitiveness (European Commission 2013), and the defence capability development plan adopted in 2014, which indicates that the development of European and national capabilities for outer space is becoming an increasingly important issue in meeting security challenges.

Such clear emphasis on space capabilities for European Union defence purposes, according to Frank Slijper (2015: p. 255), is a fundamental change in the EU approach to space resources. However, it must be highlighted, that the use of space resources for military purposes was a priority goal of the EU Member States long before the involvement of European Community structures in space policy. It would be wrong, therefore, to assume that after several decades of development of military space capabilities, the governments of the Member States would decide to completely change the nature of their resources. On the contrary, the latest global strategy for EU foreign and security policy emphasised that today's volatile world is not enough, and that military capacity and capability development are needed to respond to external crises. This is a continuation of the narrative visible in the documents of the meetings of the Western European Union, where parliamentarians from the Member States from the beginning of the development of space technologies emphasised the need for the development of space resources for European security (Western European Union 1965: Annex I). It is also a repetition of the thesis from the report of the European Parliament from 2006, in which it was explicitly stated that although the European Union treats soft power instruments such as diplomacy on an equal footing with military instruments, and in both these groups of instruments space policy should be included (Johnson 2006: p. 9). The same report emphasises that in the context of the interests and security objectives of the European Union, it should be determined: the activities in space that should be considered acceptable, and the artificial division into military and civil uses of space resources (Johnson 2006: p. 9). The return to the 2006 strategy in the global strategy indicates the continuity of some ideas

that can be introduced as soon as the appropriate political window appears. A similar situation applies to the argument for the need for constant observation of the Earth as an important element of ensuring security indicated in the global strategy of 2016, which was emphasised, among others, in the WEU report from 2002 and WEU recommendation No. 713 (Western European Union 2002).

In turn, autonomous access to space, also highlighted in the global strategy, was the subject of the 2003 report and recommendation of the WEU Assembly No. 729 (Western European Union 2003). In addition, the need for investment in intelligence, observation and reconnaissance, also highlighted in the global strategy, was previously indicated in WEU Recommendation No. 755 of 2004 (Western European Union 2004). Thus, linking the Member States' military space resources with the European Union's space policy is a derivative of pre-existing processes at the Member State level, and coordination and cooperation between EU countries in the field of building space resources existed before the creation of the European space policy. However, the processes of coordination and cooperation between states do not always have the intended effect, which is a premise for the increased involvement of the European Union in the field of regulation and coordination of defence capabilities. An interesting example is the MUSIS (Multinational Space-based Imaging System) programme launched on December 13, 2006 with the signing of the agreement by the defence chiefs of Belgium, France, Greece, Spain, Germany and Italy (and Sweden as an observer), which aimed to harmonise system resources optical and radar recognition (Peter 2008: p. 61; Western European Union 2008). Currently, the MUSIS programme operating under the Organisation for Joint Armament Co-operation (OCCAR) binds only two countries, Italy and France, and it started working on a new satellite observation system beyond the study phase only in November 2019 (*MUSIS Stage 2 Contract Signature* 2019).

Whose autonomy in space? The role of the Member States' resources in searching for EU autonomy in space

The question arises about the stability of the agenda promoted by countries with space resources in Europe, and to what extent can they shape the activities of the Commission and the European Parliament. Probably, the agenda of the governments of France, Great Britain, Spain, Italy and the Netherlands remains unchanged, only the conditions in which they pursue their interests related to the use of space change, such as strategic autonomy (Fiott 2020). The selection of these countries is dictated primarily by the analysis of projects implemented jointly by the above-mentioned countries (OCCAR, MUSIS) related to the use of space for strategic purposes. An important indicator is also the budget constraints derived from the 2008 economic crisis. The awareness of the need to develop space potential in the face of limited financial resources was for many governments a sufficient impulse to support European space projects, thus reducing expenditure and distributing the burden of financing space resources to all European Union countries. Because, as indicated above, tasks related to the development of the

European space potential for foreign and security policy purposes largely reflect the assumptions made in this regard by the governments of the Member States at the turn of the 20th and 21st centuries, the failure to develop some programmes (such as MUSIS) is the result of strategic decisions that increased the importance of European space policy. However, at the current stage, when European space policy is only being formulated, it is difficult to say that the national interest disappears and all competences have been transferred to the Union level. However, when we assume that the logic of realising the national interest works in the European space policy, but also the will to cooperate in order to achieve benefits from the implementation of a joint project, the definition of the national interest also changes. Thus, the construction of the national interest is "a derivative of the struggle to stand out and dominate where the stake has already been determined" (Adler-Nissen 2009: p. 132).

The autonomy of European space is based on both material factors resulting from the EU's space capabilities, i.e. systems such as Galileo, Copernicus or SSA, but also the will to use these systems to ensure security in the EU. This also applies to the fullest use of resources in strengthening the EU's autonomy in terms of access to space and the possibility of its use to achieve the objectives of public policy, trade policy, and security and defence policy. This mainly involves the development of space systems that are not yet in EU resources, such as SST, and those that will provide uninterrupted radio spectrum access that may be disrupted by other systems. This is largely related to support activities for space services that "can strengthen the EU's and Member States' capacity to tackle growing security challenges and improve the monitoring and control of flows which have security implications" (European Commission 2016: p. 10). It is worth pointing out that the two systems important for European autonomy are: (1) the GOVSATCOM system, and (2) systems being under development that provide observation capabilities for instruments other than those placed in outer space. Therefore, EU aims to create a synergy of space services with the unmanned aerial vehicle system. The premise for such a system is enhanced control of EU territory, border area and space adjacent to EU territory, support for border control and maritime surveillance. It also means that the new EU satellite systems will allow for both the compilation of data obtained from observation satellites and the transmission of signals from unmanned vehicles through the expanded EDRS system. Such combination of systems will allow not only to support European security, but in the long run will ensure an increase in European strategic autonomy. Consequently, it will require moving advanced industrial production from Asia to Europe to ensure strategic independence.

Limited access to secure communication resources using MILSATCOM military instruments in EU countries has made one of the priorities of European space policy and the pursuit of autonomy the creation of the European satellite communication system GOVSATCOM (European Commission 2016: p. 10). This will supplement European space resources with another, strategically important element enabling the implementation of foreign and security policy at the Community level, without the need to use the resources of the Member States. This is largely associated with the development of the

international situation in regions close to the EU as well as changes in the structure of EU membership.

A need of action arises also from the challenging operational environment for European security actors, because new threats and risks emerge constantly. The requirements for secure satellite communications by public authorities at the national and EU level also evolve rapidly, especially during crises such as COVID-19. Therefore, there is a discrepancy between risks and needs, and limited available resources, which are often not secure enough (Proposal for a Regulation 2018/0236: Annex). Such situation increases risks for key European missions, European security and infrastructure in the EU Member States (Council Directive 2008/114/EC). Among the main factors for space autonomy is the fairly fragmented supply and demand for secure satellite communications. Usually, before serious crises, human or naturally created, critical security needs of many users are not fully met, therefore space assets can provide such an opportunity. Nevertheless, space autonomy has begun a critical infrastructure as well, so there is a need to protect this resource as well (Hesse, Hornung 2015).

All aforementioned goals can be reached only with a stronger EU position in the international arena among space-faring actors. This means a normative commitment to adopt new legally binding solutions in the area of the UN space conventions, in particular in matters related to the management of mining operations and space activities. Thus, the space strategy states that the Commission, in cooperation with the High Representative and the Member States, will promote international principles of responsible space behaviour within the United Nations and other relevant multilateral fora. Although not explicitly indicated, this provision implies involvement in the work of COPUOS, the UN specialised committee for the peaceful use of space. Additionally, it was declared that the EU would lead the way in dealing with problems related to the growing number of actors in space and the increasing number of space objects as well as space debris. However, the strategy does not refer to the Code of Conduct (CoC) proposed by the EU in 2008 and systematically developed regarding space activities. This is largely due to the failure of EU diplomatic efforts to adopt CoC, which culminated in a meeting on July 27-31, 2015 in New York. Because no agreement could be reached on the basic principles and definitions in the CoC, as well as the fact that representatives of the BRICS countries were jointly against the negotiated text of the agreement. As the EU representative failed to seek a mandate from the UN to continue negotiations, the CoC concept was abandoned. Therefore, in the new space strategy, the Commission decided not to refer to CoC as a diplomatic initiative, whose support will not translate into the creation of regulatory instruments.

Conclusions

The central finding of this article is that the space autonomy is, to a considerable extent, political. As a political slogan, it gives justifications for political actions to shape decisions taken by EU policymakers that influence the development of industrial base, the role of key technologies, directions for national economies, and regulatory behaviour on

international level with an attempt to secure EU space autonomy with non-binding Code of Conduct. But also space autonomy is of technical nature, and it enables interoperability among different industries, and different economies in the EU. The space autonomy could be grouped into three functional levels: (1) institutional, with new Space Agency, (2) systemic, with clear economic results (Fiott 2020), and (3) military, with uncontested strategic information and communication. Space autonomy of the European Union has several characteristics that place it in the center of contemporary strategic studies of power Europe, and it has to be considered from an economic, legal, and institutional point of view. The autonomy has been recognised in different areas of the European economy, and it is not only about military autonomy, secret operations, intelligence or surveillance, actions but also crucial for peacekeeping operations, where the EU has been more active in the last few years. Water conflicts, armistice, casualties, collateral damages, transport of ammunitions could be visible from the orbit, and traceable with links to particular actors. Therefore, for European security keeping space autonomy is a key asset that extends and strengthens reliable instruments of action the EU has at its disposal.

Irma Słomczyńska – habilitated doctor, an Assistant Professor at the Faculty of Political Science and Journalism, Maria Curie-Skłodowska University in Lublin. Her research interests include: European Space Policy, Common Security and Defence Policy, European security, and new forms of European governance. She has published several scientific works in these fields, such as: *Europejska polityka kosmiczna* (2017), *Europejska Polityka Bezpieczeństwa i Obrony. Uwarunkowania – struktury – funkcjonowanie*, Lublin (2007), and *European Space Security and Regional Order* in: *Cross-Disciplinary Perspectives on Regional and Global Security*, eds. P. Frankowski, A. Gruszczak, London (2018).

Irma Słomczyńska – doktor habilitowana, adiunkt na Wydziale Politologii i Dziennikarstwa Uniwersytetu Marii Curie-Skłodowskiej w Lublinie. Zainteresowania badawcze obejmują europejską politykę kosmiczną, Wspólną Politykę Bezpieczeństwa i Obrony UE, bezpieczeństwo europejskie oraz nowe formy zarządzania w Unii Europejskiej. Opublikowała kilkanaście prac naukowych w wymienionych obszarach tematycznych, w tym monografie *Europejska polityka kosmiczna*, Lublin (2017), *Europejska Polityka Bezpieczeństwa i Obrony. Uwarunkowania – struktury – funkcjonowanie*, Lublin (2007), zaś ostatnio rozdział *European Space Security and Regional Order* w: *Cross-Disciplinary Perspectives on Regional and Global Security*, red. P. Frankowski, A. Gruszczak, London (2018).

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