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SPACE AND DEFENCE: A HYBRIDISATION OF EU SPACE POLICY AND CSDP

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ABSTRACT

The European Union (EU) has developed its Space Policy and a comprehensive Space Programme geared towards pursuing distinctively civilian objectives. However, recent EU practice increasingly intertwines the use of space with objectives relating to security and defence. As the paper shows, this results in a dual dynamic. On the one hand, the Common Security and Defence Policy is increasingly concerned with the space domain, makes use of EU space assets originally developed for civilian purposes and extends its operational tools to the protection of space assets from threats. On the other hand, security and defence objectives are explicitly incorporated into the EU Space Policy, challenging the traditional civilian-centric narrative. This dynamic not only makes it harder to trace a clear line of demarcation between two policy areas characterised by different institutional contexts and procedures, but also establishes a unique approach to articulating the relationship between the CSDP and other EU policies.

Keywords: EU Space Policy, CSDP, EU Space Programme, EU SatCen.

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1. Introduction: Scope and Purpose of the Research

The European Union (EU) has increasingly positioned itself as a significant player in the global space arena, displaying advanced capabilities across multiple sectors.[1] This development has been accompanied by a substantial transformation of the Union's Space Policy since its inception. Traditionally, the Union's involvement in space activities aimed at strengthening technological innovation and industrial competitiveness exclusively through civilian means. This approach reflected the broader objectives of European integration, emphasising economic growth and scientific progress, while Member States retained control over the military uses of space.[2]

[1] The EU possesses the broad majority of processes and industrial capabilities needed to develop space programmes, with expenditure second to that of the US. In 2023, it had already launched a total of 189 satellites in Space and in July 2024 successfully managed to regain an autonomous launching capability. See: https://payloadspace.com/2023-orbital-launches-by-country/. For a more detailed analysis, see: M. Aliberti, O. Cappelli, R. Praino, *Power, State and Space. Conceptualising, Measuring and Comparing Space Actors*, Springer, 2023.

[2] On EU Space Policy, see: V. Reillon, *European Space Policy: Historical Perspectives, Specific aspects and key challenges*, *European Parliamentary Research Service*, 2017; R. E. Papadopoulou, *The European Union and Space: a Star Wars Saga*, *European Journal of Law Reform*, Vol. 21, 2019, pp. 505-525; E. Topcuoglu, S. Bora, *Lessons from EU Space Programmes for Collective Defence*, *European Foreign Affairs Review*, Vol. 27 No. 3, 2022, pp. 417-436; J. Wouters, G. Pavesi, *The Final Frontier? The European Union and the Governance of Outer Space*, *Journal of European Integration*, Vol. 45 No. 8, pp. 1199-1217, 2023; C. Cellerino, *EU Space Policy and Strategic Autonomy: Tackling Legal Complexities in the Enhancement of the 'Security and Defence Dimension of the Union in Space'*, *European Papers*, Vol. 8, 2023, pp. 487-501; C. Poirier, M. Bataille, L. Petzold, *EU Space Policy and the Involvement of Civil Society*, Final Study Report for the European Economic and Social Committee, 2023, available at: https://www.eesc.europa.eu/sites/default/files/files/qe-04-23-899-en-n.pdf.

However, the geopolitical landscape has changed, prompting a reconsideration of the EU's approach to space. Over the past two decades, space has emerged as a contested[3] and strategic domain, requiring the integration of security and defence objectives into what was once a predominantly civilian-focused policy.[4] This evolving context has progressively introduced security and defence considerations into the EU Space Policy, as evidenced most recently by the 2022 Strategic Compass for Security and Defence[5] and the 2023 EU Space Strategy for Security and Defence.[6]

These documents rest on a dual-use approach to space matters. Most notably, the 2023 EU Space Strategy highlights the critical nature of space by allowing the invocation of Article 42(7) TEU, the defence mutual assistance clause, in the event of a space-related threat or incident, underlining the growing integration of space into the EU's collective security framework. In this context, EU Space Programmes such as Copernicus and Galileo now play crucial roles in both civilian and military applications. As a result, there is clear evidence of convergence between the current EU Space Policy and the Common Security and Defence Policy (CSDP), despite their distinctions - the former driven by civilian objectives pursued within a supranational framework, the latter governed by intergovernmental decision-making structures. This overlap demonstrates that while the policies remain formally distinct, they are profoundly and increasingly interconnected.

Against this background, this paper examines the convergence between the EU Space Policy and the CSDP, assessing the legal and operational tools that either facilitate or challenge the hybridisation of these policies. While the paper acknowledges that space also features in relations between the EU and third countries, it does not address the EU external action. Instead, the focus is narrowed to the integration of security and defence objectives within the traditionally civilian-oriented EU Space Policy, and on the resulting interplay between this policy field and CSDP. Space diplomacy and cooperation with third countries, as well as the international implications of the EU's space initiatives, thus fall outside the scope of this research.

The paper argues that two centripetal forces characterise the current development of the CSDP and the EU Space Policy. On the one hand, the practice of CSDP increasingly includes operational objectives involving the space domain. On the other hand, the EU Space Policy is progressively becoming aware of its strategic relevance, thus incorporating security and defence components. These centripetal dynamics result in a hybridisation of the two policies: while EU Space Policy assets are key to the pursuit of security and defence objectives within the CSDP, the objectives of the latter are currently being incorporated into the evolution of the EU Space Policy and its practical implementation.

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[3] S. Marchisio, *The Final Frontier: Prospects for arms control in outer space*, *European Leadership Network*, 2019, pp. 1-6.

[4] C. Cellerino, *EU Space Policy and Strategic Autonomy: Tackling Legal Complexities in the Enhancement of the 'Security and Defence Dimension of the Union in Space'*, cit., p. 490.

[5] Council of the European Union, A Strategic Compass for Security and Defence - For a European Union that protects its citizens, values and interests and contributes to international peace and security, 21 March 2022, available at: https://data.consilium.europa.eu/doc/document/ST-7371-2022-INIT/en/pdf (hereinafter "Strategic Compass").

[6] European Commission, Directorate-General for Defence Industry and Space, Joint Communication to the European Parliament and the Council, European Union Space Strategy for Security and Defence, JOIN(2023) 9.

The structure of the paper reflects the approach just outlined. *Section 2* assesses the origins and evolution of the EU Space Policy and examines the key legal bases that underpin the policy. Additionally, the governance model is explored, describing the roles of the European Commission, the European Space Agency (ESA), and the Member States, together with key EU Space Programmes such as Galileo, Copernicus, EGNOS, GOVSATCOM, and Iris[2].

Section 3 delves into how space has become a strategic domain for the CSDP. It covers the legal basis of the CSDP, its instruments for defence capability development and crisis management. In this regard, the section highlights that space assets are increasingly integrated into CSDP initiatives like the Permanent Structured Cooperation (PESCO) and the role of the EU Satellite Centre (SatCen) in supporting CSDP operations. The evolving interaction between the CSDP and space for security preparedness is further explored, focusing on the mechanisms established to protect EU space assets from security threats.

Section 4 examines how the EU Space Policy has evolved to contribute to security and defence objectives. Building on the 2023 EU Space Strategy for Security and Defence, the section prospectively assesses its implications for secure satellite communications, space-based earth observation, and global satellite navigation systems like Galileo. It also introduces new perspectives on Space Situational Awareness, explaining its contribution to the defence dimension of space. Furthermore, it considers the financial aspects of the EU's security and defence activities in space, as well as the role of private actors in contributing to defence and security within the EU space sector, together with the potential impact of the forthcoming EU Space Law on security and defence.

Finally, *section 5* offers a synthesis of the findings, reflecting on the growing convergence between the EU Space Policy and the CSDP. The paper concludes by considering whether these distinct policies are progressively forming a more integrated framework in response to evolving security and geopolitical challenges in the space domain.

2. The EU Space Policy: Competences, Actors and Tools

Before analysing the relationship between the EU Space Policy and the CSDP, the former needs to be framed with a view to untangle its inherent complexities.

The following subsections address the key elements of the EU Space Policy: its evolution and content; the allocation of competences within the EU legal framework and the actors involved in its governance; and finally, the main programmes and instruments.

2.1. Origins and Evolution of the EU Space Policy

The origins of the EU Space Policy date back to the 1980s and are marked by an intrinsically civilian approach, driven by scientific, research and economic goals.[7] Already in 1979, a European Parliament Resolution on the participation of the European Economic Community (EEC)[8] in space

[7] C. Cellerino, *EU Space Policy and Strategic Autonomy: Tackling Legal Complexities in the Enhancement of the 'Security and Defence Dimension of the Union in Space'*, cit., p. 493; A. Kolosov, *Strengthening the Links Between European Union Space and Defence: Adopting a Combined Approach*, *Space Policy*, Vol. 63, 2023, p. 2.
[8] European Parliament, Resolution on Community Participation in Space Research, 7 May 1979.

research emphasised the benefits of space activities, particularly in areas such as earth observation, satellite navigation and material science.[9] However, Community action in the space sector received a boost from the 1986 Single European Act (SEA),[10] which amended the EEC Treaty and expanded the powers of community institutions in various fields, including research and development, of which space policy was then considered to be part.[11] This allowed the Commission to exercise greater influence over space regulation, as the Treaty now allowed it to intervene in those space activities linked to areas falling within its new competences.[12] The 1988 Communication on Space Policy reflected this approach. Drafted by the Commission at the request of Parliament, the Communication focused on six lines of action: research and development, telecommunications, Earth observation, industrial development, legal environment and training.[13]

Two major developments emerged in the 1990s: the establishment of an independent satellite navigation and Earth observation capability, which led to the development of EGNOS, Galileo and Copernicus;[14] and the reconceptualisation of Space Policy as more transversal and horizontal.[15] This led to the introduction of new priorities for the space domain, such as satellite navigation, space industry, and also defence and security aspects.[16] The idea of space as a horizontal policy was reiterated in the 2003 Commission's White Paper on the European Space Policy, which described space primarily as a tool to support EU policy goals such as economic growth and sustainable development.[17]

The 2007 Commission's Communication on an EU Space Policy,[18] which introduced the "first ever European Space Policy"[19] and resulted from the collaboration between the EU and the European Space Agency (ESA),[20] represented a major development. The Communication put forward

[9] *Ibid*., Arts. 1 and 2.
[10] E. Sigalas, *The European Union Space Policy*, Oxford Research Encyclopedia of Politics, 2017, p. 4.
[11] R. E. Papadopoulou, *The European Union and Space: a Star Wars Saga, European Journal of Law Reform*, Vol. 21, 2019, p. 507.
[12] For an analysis on the evolution of the EU Space competence see: F. G. von der Dunk, *The EU Space Competence as per the Treaty of Lisbon: Sea Change or Empty Shell? Proceedings of the International Institute of Space Law*, Eleven International, 2011, pp. 382-392.
[13] Communication from the Commission of the European Communities, The Community and space: a coherent approach, COM(88) 417. On this point see also R.E. Papadopoulou, *The European Union and Space: a Star Wars Saga*, cit., p. 514; V. Reillon, *European Space Policy: Historical Perspectives, Specific Aspects and Key Challenges,* cit., p. 6; J. Wouters, G. Pavesi, *The Final Frontier? The European Union and the Governance of Outer Space*, cit., p. 9.
[14] In this regard, in December 2001, the Commission released a communication including the first report of the joint task-force ESA-Commission. In this communication the European Space Policy was considered to combine on the one hand the strategy sketched in 2000, on the other, the European space programmes requested during the 1990s, as well as implementing rules. For an analysis of these programmes, see *infra*, section 2.4.
[15] V. Reillon, *European Space Policy: Historical Perspectives, Specific Aspects and Key Challenges*, cit., p. 8. For some examples of the utility of space for infrastructures and services, M. Salini, *European Space Policy: an Underestimated Success*, *European issues*, Vol. 611, 2021; M. Aliberti, S. Ferretti, P. Hulsroj, A. Lahcen, *Europe in the Future and Contributions of Space*, ESPI Report 55, 2016, pp. 34-44, available at: https://www.espi.or.at/wp-content/uploads/espidocs/Public%20ESPI%20Reports/Rep55_online_ABA_160201-1143.pdf.
[16] V. Reillon, *European Space Policy: Historical Perspectives, Specific Aspects and Key Challenges*, cit., p. 8.
[17] R.E. Papadopoulou,*The European Union and Space: a Star Wars Saga*, cit., p. 515.
[18] Communication from the Commission to the Council and the European Parliament, European Space Policy, COM(2007) 212.
[19] *Ibid.*, p. 4.
[20] See *infra*, section 2.3.2.

different objectives, based on the peaceful exploitation of space: development and exploitation of space applications for the EU's interests and needs; EU security and defence needs in space; ensuring strong and competitive space industry; contributing to the general knowledge; and securing unrestricted access to new technologies, systems and capabilities.[21] Furthermore, to implement the Space Policy, the Union, the ESA and Member States were expected to create a space programme.[22] Shortly after the adoption of the Commission's Communication, the Lisbon Treaty finally gave the EU a specific competence on space.[23] The new framework of the Treaty enhanced the importance of space in the institutional practice of the EU, leading to the adoption of further measures aimed at implementing the already existing Space Policy.[24]

As can be seen from this brief reconstruction, European Space Policy, which originated from and evolved mainly for scientific and economic purposes, has been developed as a civilian domain.[25] It is true that security and defence aspects had already been provisionally included in EU initiatives in relation to space since the 1990s. For example, a 1996 communication emphasised the dual-use nature of space resources, calling for better coordination between civilian and military aspects.[26] However, the communication itself highlighted that the EU's competences were limited to the civilian component of space activities and programmes. Indeed, "it [was] not within the Commission's remit to consider the military aspects of space technology applications".[27] Furthermore, the Commission stressed that civilian applications of space technology had progressively become independent of military needs and were therefore driving the market.[28] The same approach is present in the 2004 Council Conclusions "European Space policy: ESDP and Space".[29] This document identified some preliminary requirements to be reflected in the EU Space Policy and corresponding space programmes, underlining the need to consider security and defence aspects in the progressive development of an EU Space Policy. However, the Council affirmed that there was no need to design a defence space policy, but rather to build on the existing civilian policies and programmes.[30]

[21] V. Reillon, *European Space Policy: Historical Perspectives, Specific Aspects and Key Challenges*, cit., pp. 16-17; ESA, *European Space Policy,* ESA website, https://www.esa.int.

[22] V. Reillon, *European Space Policy: Historical Perspectives, Specific Aspects and Key Challenges*, cit., p. 17.

[23] Art. 189, TFEU.

[24] C. Poirier, M. Bataille, L. Petzold, *EU Space Policy and the Involvement of Civil Society*, cit., p. 6.

[25] In this regard, particularly significant is the long-lasting cooperation in the development of the European Space Policy between the EU institutions and ESA, the latter having the aim of contributing to space research and exploration only for civilian purposes.

[26]Communication from the Commission to the Council and European Parliament, The European Union and pace: fostering applications, markets and industrial competitiveness, COM(96) 617, Chapter 9.

[27] *Ibid.*, para. 62.

[28] *Ibid.*, para. 63.

[29] Council of the European Union, *European Space Policy: ESDP and Space*, 2004, available at: https://data.consilium.europa.eu/doc/document/ST-11616-2004-REV-3/en/pdf.

[30] *Ibid.*, para. 17; for a more in-depth study see: A. Kolosov, *Strengthening the Links Between European Union Space and Defence*, cit., p. 4.

Against this predominantly civilian approach, the most recent practice seems indicative of a paradigm shift. In the 2016 EU Space Strategy[31] and the 2021 EU Space Programme,[32] the Union's involvement in space activities was seen in relation to both socio-economic and security aspects.[33] This narrative has been significantly strengthened by the 2022 Strategic Compass and the 2023 EU Space Strategy for Security and Defence.[34] As noted afterwards in this paper, the 2023 Communication marks a shift in the development of the EU Space Policy, which now incorporates security and defence aspects and brings it closer towards CSDP objectives.

2.2. The EU Space Policy's Objectives and Legal Bases

The main legal basis for EU actions in the space domain is Article 189 TFEU, introduced by the Lisbon Treaty. This provision gives the EU a shared parallel competence in space. Article 189 TFEU should be read in conjunction with Article 4(3) TFEU, which states that "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".[35] This provision indicates that the Union has a shared competence in space policy.[36] However, the second part of the sentence in Article 4(3) TFEU qualifies this competence as "parallel",[37] because it excludes that EU legislation may pre-empt action by the Member States, thus derogating from the general rule under Article 2(2) TFEU.[38] As with any non-exclusive EU competence, EU measures in this area must respect the principles of subsidiarity and proportionality.[39]

While the development of a Community policy on space was previously pursued essentially through non-binding instruments, the entry into force of the Lisbon Treaty in 2009 has paved the way for a more institutionalised governance of space.[40] Following this Treaty reform, Article 189 TFEU allows for decision-making under the ordinary legislative procedure, involving the Commission, the Parliament and the Council. However, this development does not imply that the Union did not take

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[31] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Space Strategy for Europe, COM(2016) 705 final.

[32] Regulation (EU) 2021/696 of the European Parliament and of the Council of 28 April 2021 establishing the Union Space Programme and the European Union Agency for the Space Programme and repealing Regulations (EU) No 912/2010, (EU) No 1285/2013 and (EU) No 377/2014 and Decision No 541/2014/EU (hereinafter "Regulation (EU) 2021/696").

[33] C. Poirier, M. Bataille, L. Petzold, *EU Space Policy and the Involvement of Civil Society*, p. 3; J. P. Darnis., A. Veclani, M. Nones, *Understanding the European Space Policy - The Reference Book*, Istituto Affari Internazionali, 2011, pp. 40-50.

[34] Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council, European Union Space Strategy for Security and Defence, JOIN(2023) 9.

[35] Art. 4(3), TFEU.

[36] S. Mangiameli, *Article 4 [Shared Competence],* in H.J. Blanke, S. Mangiameli (eds), *Treaty on the Functioning of the European Union – A Commentary, Volume I: Preamble, Articles 1-89*, Springer, 2021, p. 199; L. S. Rossi, *Commento all'art. 4 TFUE*, in F. Pocar, M. C. Baruffi (eds), *Commentario breve ai trattati dell'Unione europea*, CEDAM, 2014, p. 167.

[37] S. Mangiameli, *Article 4 [Shared Competence]*, cit., p. 200.

[38] M. E. De Maestri, *Annuncio ritardo: la proposta di legge spaziale europea fra supposizioni e bisogni*, *Quaderni AISDUE*, Vol. 2, 2024, p. 3.

[39] Art. 5, TEU.

[40] For an in-depth analysis of the triangular governance model see *infra*, section 2.3.

action in the space domain before Lisbon. Although the EC did not have competence on space activities *per se*, it has managed to play a leading role in the field of space by exercising the powers granted in other areas.[41]

Even though the EU has long been a space actor, the introduction of Article 189 TFEU has had the effect of conferring on the EU a legislative role in space. Admittedly, the space policy under Article 189(1) TFEU is intended only to "promote scientific and technical progress, industrial competitiveness and the implementation of [Union] policies". Similarly, the Union's action is limited to promoting joint initiatives, supporting research and technological development and coordinating efforts among Member States necessary for space exploration. This wording seems to significantly limit the scope of EU action, but legislative practice has so far rested on a rather flexible interpretation of this provision.

The most significant limitation to EU legislative action in this policy area derives from Article 189(2) TFEU, which excludes any harmonisation of national legislation. The wording "establish the necessary measures" allows for other initiatives, such as "decisions, best practices, codes of conduct, and non-binding standards",[42] but does not permit a regulatory regime approximating domestic provisions.

However, by establishing that actions under this Article are "without prejudice to the other provisions of this Title", Article 189(4) TFEU suggests that the purported harmonisation may be grounded on other applicable legal bases.[43] The current EU legal framework allows the Union to act in space through other sectoral competences, such as transport or research. Even Article 114 TFEU may be invoked as a legal basis for space initiatives insofar as they involve measures aimed at removing obstacles to "the establishment and functioning of the internal market".[44] Article 173 TFEU on the competitiveness of industry can also be used to support space initiatives: through the development of a proper space industry, it is believed that the international position of the Union's industries can be improved in terms of competitiveness.[45] Article 182 TFEU allows for space technology projects to be funded under the Multi-annual Framework Programme,[46] while Article 186 TFEU provides for cooperation agreements with third countries and other international organisations on technological, scientific and research projects, which may include space

[41] See *supra*, section 2.1. Also, for an analysis on the evolution of the EU Space competence see: F. G. von der Dunk, *The EU Space Competence as per the Treaty of Lisbon: Sea Change or Empty Shell?* cit., pp. 382-392.

[42] S. Potter, *Approaching Harmonisation: Examining the European Union's Efforts to Create a Common EU Space Law and Assessing its Potential Legal Foundations*, *Stanford-Vienna European Union Law Working Papers,* No. 77, 2023, p. 17.

[43] For an assessment of potential legal basis for the EU Space Law: S. Potter, *Approaching Harmonisation: Examining the European Union's Efforts to Create a Common EU Space Law and Assessing its Potential Legal Foundations*, cit. On the institutional framework in which the Commission proposal has been put forth: B. Jacobs, *An Institutional Law Analysis of the European Commission's EU Space Law Proposal*, *Air and Space Law*, No. 2, 2024, pp. 1-30. For a general comment regarding the proposal for an EU Space Law: L. Cesari, *Developing an EU Space Law: The Process of Harmonising National Regulations*, *HAL Open Science*, 2024.

[44] Art. 114, TFEU.

[45] M. Uvalic, *Industrial Policy in Europe*, policy brief from the conference "The Role of the State in Economic Growth in Europe" held at Sciences Po, Paris, 6 October 2014, and drawing on submissions to the LSE Growth Commission (2013).

[46] See *infra*, section 4.3.

initiatives.[47] Finally, the EU legislature may resort to the flexibility clause (Article 352 TFEU), when it deems it necessary to act in order to achieve one of the objectives set out in the Treaties, in the absence of an appropriate legal basis.[48]

The current debate on the legal basis for the future "EU Space Law" Regulation provides an example of the potential combination of different legal bases.[49] Article 189(1) TFEU could be seen as providing the most appropriate legal basis for this piece of legislation. This provision allows for the development of an EU Space Policy and has been used as a legal basis for EU legislation on space in the past.[50] Nevertheless, it also limits the EU's power to harmonise national legislations. However, as the fourth paragraph indicates that Article 189 TFEU is without prejudice to the implementation of other provisions of the same Title, other legal bases may be used, giving the Union a wider margin of manoeuvre.

This seems to be the Commission's position on the proposal. In the initial call for evidence for the impact assessment, the Commission suggested that the proposal should be based on Article 114 TFEU, the main Treaty provision for the harmonisation of national legislation in the internal market.[51] In light of the fragmented national regulatory landscape, the use of this provision would be justified as a way to overcome possible obstructions to the smooth functioning of the internal market and the effective exercise of its fundamental freedoms.[52] As highlighted in academic literature, Article 114 TFEU "could be used to address disparate national legal regimes as long as those regimes 'could' affect competition and interstate trade".[53] This could be the case, for example, for national regimes for the registration of space objects.[54] It is the Commission's stance that "[d]ifferences in the scope, depth and implementation of these national legislations can reduce the conditions for fair competition and undermine the competitiveness of EU space operators when planning, designing and operating space activities in the EU, as well as when competing with non-EU space operators".[55] Alternative legal bases of relevance can be found in other Treaty provisions, such as Articles 170 TFEU (on trans-European networks), 179 TFEU (on the

[47] The Union has already signed similar agreements including EU space assets, with third countries such as Australia, Chile or the United States. For more information see: https://research-and-innovation.ec.europa.eu/strategy/strategy-2020-2024/europe-world/international-cooperation/bilateral-cooperation-science-and-technology-agreements-non-eu-countries_en.

[48] Art. 352, TFEU.

[49] European Parliament, EU Space Law, Legislative Train Schedule, available at: https://www.europarl.europa.eu/legislative-train/theme-a-europe-fit-for-the-digital-age/file-eu-space-law#:~:text=The%20proposed%20EU%20space%20law,consistent%20and%20EU%2Dwide%20approach (referring to the 20/10/2024 version).

[50] Regulation (EU) 2021/696.

[51] European Commission, EU Space Law - new rules for safe, resilient and sustainable peace activities, Call for evidence for an impact assessment, available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13971-EU-Space-Law-new-rules-for-safe-resilient-and-sustainable-space-activities_en.

[52] Judgement of the Court of 5 October 2000, Case C-376/98, *Federal Republic of Germany v European Parliament and Council of the European Union*.

[53] S. Potter, *Approaching Harmonisation: Examining the European Union's Efforts to Create a Common EU Space Law and Assessing its Potential Legal Foundations*, cit., p. 18.

[54] *Ibid*.

[55] European Commission, EU Space Law - new rules for safe, resilient and sustainable peace activities, Call for evidence for an impact assessment, available at: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13971-EU-Space-Law-new-rules-for-safe-resilient-and-sustainable-space-activities_en.

establishment of a European research area) or 352 TFEU (flexibility clause). However, these possibilities remain purely speculative to date.[56]

Turning to the objectives of the EU Space Policy, Article 189(1) TFEU indicates that it should aim "to promote scientific and technical progress, industrial competitiveness and the implementation of its policies".[57] These general objectives are better contextualised by Regulation 2021/696 on the European Space Programme, which refers to the space objectives outlined in Article 4(3)[58] TFEU and Article 189(2) TFEU.[59] The Regulation sets out the main objectives for the Space Programme: establishing an effective space governance to support the EU's key political priorities;[60] strengthening the EU's role in space by supporting "autonomous, reliable and cost-effective access to space, especially as regards critical infrastructure and technology";[61] promoting the EU's competitiveness in the industrial and transport sectors;[62] and lastly, "implementing appropriate measures, including development and deployment of technologies for spacecraft disposal at the end of operational lifetime and for space debris disposal"[63] for environmentally responsible behaviour in space. The objectives of the Regulation recall those already established in the 2007 European Space Policy, in considering the development of space assets to serve the political priorities of Europe. In addition, it also stressed the importance of addressing issues relating to development and climate change, as the Regulation does. Moreover, Regulation 2021/696 also incorporates the need to ensure "a strong and competitive space industry".[64] Finally, in 2007 as in 2021, one of the main priorities was to ensure the Union's unrestricted and cost-effective access to space.

In this broad scope, the EU Space Policy has witnessed a paradigm shift in 2022. Indeed, the objectives of EU action in the space domain have subsequently undergone an expansion in 2022, when the Strategic Compass recognised space as a strategic domain, bringing security and defence considerations into the civilian-oriented discourse on space.[65]

2.3. The Actors and Decision-Making: A Triangular Governance Model

The European Space Policy is managed by different actors. This leads to high levels of complexity, with different stakeholders having different roles in managing the space sector.[66] In general terms,

[56] For an in-depth analysis of the possible alternative legal basis see: S. Potter, *Approaching Harmonisation: Examining the European Union's Efforts to Create a Common EU Space Law and Assessing its Potential Legal Foundations*, cit.
[57] Art. 189, TFEU.
[58] Rec. 9, Regulation (EU) 2021/696.
[59] *Ibid.*, Rec. 6.
[60] *Ibid.*, Art. 4(1)(a).
[61] *Ibid.*, Rec. 6.
[62] On the importance of EU space industry and technological development see: A. Kolovos, *Why Europe Needs Space as Part of its Security and Defence Policy*, *Space Policy*, 18, 2002, pp. 257-261.
[63] Art. 4(1)(e), Regulation (EU)2021/696.
[64] Communication from the Commission to the Council and the European Parliament, European Space Policy, 26 April 2007, COM(2007) 212.
[65] See *infra*, section 3.2.
[66] M. Salini, *European Space Policy: an Underestimated Success*, *European Issues*, cit., 2021, p. 1.

the governance of the European Space Policy can be described using a triangular model,[67] composed of three main actors: the EU, the ESA and Member States.[68] In this section, the role of these actors will be described, as each of them represents a vertex of the triangular model.

2.3.1. The First Vertex: The European Union

At the EU level, space governance is mainly shared between the European Commission and European Union Agency for the Space Programme (EUSPA). However, other institutions and agencies also play a role in this regard.

According to Regulation 2021/696, the Commission has the main task of implementing the Space Programme, promoting the use of data and services provided by the Programme's components among private and public sectors, and ensuring complementarity, consistency and synergies between the Space Programme and other programmes of the EU.[69] Within the Commission, the Directorate-General for Defence Industry and Space (DG DEFIS) is responsible for implementing the EU Space Programme (in particular, EGNOS, Galileo and Copernicus programmes).[70] Within the Council, space affairs fall under the remit of the Competitiveness configuration (COMPET). In the framework of the EU-ESA cooperation, the Director General of the ESA may participate in meetings, forming the so-called "Space Council".[71] According to Article 189(2) TFEU, the European Parliament and the Council co-legislate and co-approve the measures necessary to meet the objectives of the European Space Policy.

Given the relevance of space assets for the Union's external action, the European External Action Service (EEAS) is also involved in the broader EU space governance structure. The High Representative of the Union for Foreign Affairs and Security Policy (HR/VP) manages CFSP and CSDP aspects of space activities and ensures coherence in the EU's external action in space. In collaboration with the DG DEFIS, the HR/VP contributes to ensuring the security of the Space Programme's components through a CSDP threat response mechanism, which will be analysed later in this paper.[72] In addition, a specific Division under the Security and Defence Unit in the EEAS, guided by the Special Envoy for Space, has been created specifically to work with the Commission, contributing to the development of the security aspects of the Space Programme.[73]

The other main actor contributing to the governance of the European Space Policy is EUSPA. Established by Regulation 2021/696, EUSPA's mission is to link space to users' needs and to achieve the highest return on investments of the Space Programme in terms of users' benefits and growth in economic competitiveness.[74] For this reason, it is called a "user-oriented operational agency"

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[67] L. Wouters, R. Hansen, *The Other Triangle in European Space Governance: The European Union, the European Space Agency and the United Nations*, in C. Jorgenson (ed.), *Proceedings of the International Institute of Space Law 2013*, Eleven International Publishing, 2014.

[68] O. E. Bayr, K. M. Akmaz , O. Aktas, *New Space: The European Union's Evolving Space Policy and Changing European Space Ecosystem*, *Studies in European Affairs*, Vol. 4, 2021, p. 121.

[69] C. Poirier, M. Bataille, L. Petzold, *EU Space Policy and the Involvement of Civil Society*, cit., p. 7.

[70] DG DEFIS is divided into 3 directorates, 2 of which are dealing with space activities: Directorate B (innovation and outreach) and Directorate C (space).

[71] Joint and concomitant meeting of the Council of the European Union and of the Council of ESA at the ministerial level.

[72] See *infra*, section 3.4.

[73] C. Poirier, M. Bataille, L. Petzold, *EU Space Policy and the Involvement of Civil Society*, cit., p. 17.

[74] EUSPA website, available at: https://www.euspa.europa.eu/about/about-euspa.

that brings together all the different stakeholders, managing the Galileo and EGNOS programmes, developing the markets for Copernicus services and data, and coordinating user-related aspects of the GOVSATCOM. In addition, it has different tasks delegated by the Commission under the 2021-2027 Multiannual Financial Framework, such as the continuation and evolution of the EGNOS and Galileo activities, as well as the management and supervision of the Space Situational Awareness programme, cooperating also with EU bodies, as well as with EU Member States and third countries.[75] EUSPA, through the role of the Security Accreditation Board,[76] is responsible for ensuring the security accreditation of the Programme and all its components, without prejudice to the competences of the Commission and of the Member States.[77] In addition to security accreditation, EUSPA is also responsible for the operational security - namely, the compliance of the system in operation to the security requirements determined by the threat and risk analysis - and security monitoring of the Programme, ensured by the Galileo Security Monitoring Centre.[78] For instance, in the establishment of GOVSATCOM, EUSPA is in charge of procuring the GOVSATCOM Hub, namely the secure operational ground segment. EUSPA is also responsible for monitoring the security of the SST programme and for shaping the security requirements and monitoring of the SST network.[79] In this context, the 2023 EU Space Strategy for Security and Defence identifies several roles for EUSPA: monitoring security as operations centre;[80] contributing to strengthening the resilience of space infrastructure and security of supply;[81] and providing a first-level analysis and reporting of security incidents that could indicate a threat.[82] Finally, the 2023 Space Strategy foresees EUSPA's contribution in supporting the Commission in the incorporation of military and security user requirements in the design and upgrade of space systems, by identifying security-related needs and by the accreditation and exploitation of dual-use systems and services.[83]

2.3.2. The Second Vertex: The European Space Agency

The ESA represents the second vertex of the governance triangle.[84] Created by the merging of two already existing organisations - the European Space Research Organisation and European Launcher Development Organisation - ESA defines itself as "Europe's gateway to space",[85]aiming to promote cooperation among its Member States in peaceful space research and technology, and to develop and implement the common Space Policy in the long-term. To that aim, the ESA harmonises the

[75] C. Poirier, M. Bataille, L. Petzold, *EU Space Policy and the Involvement of Civil Society*, cit., p. 9.
[76] The composition of the Security Accreditation Board is established at Art. 39, Regulation 2021/696, according to which the Board is composed of: a representative of each Member State; a representative of the Commission and a representative of the High Representative. The decisions taken by the Board have to be addressed to the Commission.
[77] *Ibid.*, p. 8; Art. 38, Regulation (EU) 2021/696.
[78] EUSPA, *EU Space and Security*, EUSPA website, available at: https://www.euspa.europa.eu/eu-space-programme/eu-space-and-security.
[79] *Ibid.*
[80] Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council, European Union Space Strategy for Security and Defence, JOIN(2023) 9, p. 4.
[81] *Ibid.*, p. 5.
[82] *Ibid.*, p. 8.
[83] *Ibid.*, p. 10.
[84] M. Vellano, *Agenzia Spaziale Europea (A.S.E.)*, in *Digesto delle Discipline Pubblicistiche*, Vol. I, pp. 22-31.
[85] ESA Website, available at: https://www.esa.int/.

different space policies of its 22 Member States.[86] The membership of the ESA only partially corresponds to that of the EU: for example, Norway, Switzerland and the United Kingdom are members of ESA but not of the Union. This element increasingly complicates the sharing of governance between the two organisations; moreover, considering that the EU had no explicit competence on space until the Lisbon Treaty, the ESA operated for a long time as a 'legal umbrella' for the Member States, allowing them to establish permanent cooperation on space in the absence of Union competences.[87] Furthermore, the ESA acts as a facilitator of Member States' national space programmes, engaging in the development and implementation of space programmes and policies, and taking an active role in the delineation of space activities and space coordination.[88]

Cooperation between the Union and the ESA is explicitly provided for in Article 189(3) TFEU. Regulation 2021/696 also recognises the role of the ESA in coordinating space components of Copernicus, in its implementation and evolution as well as in its infrastructures; in designing and deploying Galileo and EGNOS systems; and in conducting research and development activities for all the components of the EU Space Programme. This cooperation is based on the Commission/ESA Framework Agreement concluded in 2004.[89] The Agreement established the Space Council and the High-Level Space Policy Group, which brings together representatives of the ESA and EU Member States dealing with the implementation of the ESA and the EU space programmes.[90]

2.3.3. The Third Vertex: The Member States

The last vertex of the triangular model is represented by the Member States. Through the action of their national space agencies, they develop and implement national space policies and cooperate in the development and implementation of the European Space Policy and Programme. Member States are therefore not precluded from pursuing their national space policies, provided that they respect the principle of sincere cooperation.[91] The governance of the different Member States varies from one to another, reflecting unique national contexts and specificities.[92] Typically, various ministries are involved in different aspects of national space policies. Ministries are also responsible for relations and representation of the State at the ESA or EU level within their areas of competence.[93] Regardless of the distribution of competences, three different models of implementation of the national space policies have been identified. The first one features the presence of national space agencies; this model is usually typical of larger States (e.g. United Kingdom, Italy, France). According to the second model, the implementation of national space policies is in the hands of a space office, which is more limited in scope and strategy-making than

[86] ESA members: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland and the United Kingdom. Associate members: Latvia, Lithuania and Slovenia. Canada takes part in certain programmes under a cooperation agreement. ESA has signed European Cooperating States Agreements with Bulgaria, Cyprus and Slovakia, and cooperation agreements with Croatia and Malta.

[87] R. E. Papadopoulou, *The European Union and Space: a Star Wars Saga?*, cit., p. 506.

[88] ESPI, *ESPI Report 70 - Evolution of the Role of Space Agencies - Full Report*, 2019, p. 10.

[89] Framework Agreement between the European Community and the European Space Agency, 2004.

[90] C. Poirier, M. Bataille, L. Petzold, *EU Space Policy and the Involvement of Civil Society*, cit., pp. 17-18.

[91] Art. 4(3), TEU. See also: C. Cellerino, *EU Space Policy and Strategic Autonomy: Tackling Legal Complexities in the Enhancement of the 'Security and Defence Dimension of the Union in Space'*, cit., p. 494.

[92] D. Sagath, C. Vasko, E. Van Burg, C. Giannopapa, *Development of National Space Governance and Policy Trends in Member States of the European Space Agency*, *Acta Astronautica*, Vol. 165, 2019, p. 45.

[93] *Ibid.*, p. 46.

space agencies. This model is typical of medium-sized States (e.g. the Netherlands, Belgium). Finally, the third model is typical of those States new to the space domain and is characterised by a departmental unit within a body with larger competences.[94]

EU Member States cooperate with different international organisations, including the ESA and the EU, with different levels of involvement in space programmes. National programmes typically cover research and sovereign technologies, including in the field of security and defence, while ESA and EU programmes focus on broader initiatives, drawing on the needs of European society.[95] This discretion is also reflected in how States can implement the objectives of space policies and programmes, as well as in the possibility of engaging and cooperating with the private sector.[96] In addition, individual Member States can cooperate and establish specific agreements with each other, independently of the ESA or the EU.[97]

2.4. The Tools: Key Features of the EU Space Programme

This section briefly introduces the main components of the EU Space Programme, as articulated in Regulation 2021/696. Overall, the Programme comprises satellite services for earth observation, communications, positioning, navigation and timing, and situational awareness.

2.4.1. EGNOS

The creation of a European Geostationary Navigation Overlay Service (EGNOS) was first discussed in 1994,[98] in the context of the development of a trans-European transport network. As a first step towards the creation of a European Global Navigation Satellite System (GNSS), Europe would rely on the existing US GNSS system, the Global Positioning System. The development of EGNOS was managed under a tripartite agreement between the ESA, the European Commission and Eurocontrol.[99] Implementation began in 1998, with EGNOS becoming operational in 2008. Ownership of the assets passed to the EU on 1 April 2009.[100] On 1 January 2014, the Commission fully delegated the operation of EGNOS to the EUSPA, which replaced the European GNSS Agency (GSA). The EUSPA is currently responsible for the overall management of the EGNOS operational programme. On the other hand, the ESA leads the design and acts as a procurement agent.

EGNOS is Europe's regional Satellite-based Augmentation System (SBAS). SBAS is used to "augment the signals of Global Navigation Satellite Systems (GNSS)"[101] and increase their accuracy. The geographical scope is limited to Europe and some other neighbouring countries.[102] The services provided by EGNOS are Open Service (OS), Safety of Life Service (SoL), and EGNOS Data Access Service (EDAS).[103] These services are crucial when accuracy and integrity are essential for practical

[94] *Ibid.*, pp. 46-48.
[95] *Ibid.*, p. 34.
[96] ESPI, *Evolution of the Role of Space Agencies-Full Report*, cit., pp. 19-20.
[97] IAI, *Understanding the European Space Policy- The Reference Book*, cit., p. 35-38.
[98] Communication from the Commission on Satellite navigation services: a European approach, COM (94) 248.
[99] V. Reillon, *European Space Policy. Historical Perspective, Specific Aspects and Key Challenges,* cit., pp. 1-35.
[100] N. Antoni, M. Adriaensen, C. Giannopapa, *Institutional Space Security Programs in Europe*, in K.-U. Schrogl (ed.), *Handbook of Space Security. Policies, Applications and Programs*, Springer, 2020, pp. 1191-1224.
[101] EGNOS website, available at: www.euspa.europa.eu/eu-space-programme/egnos.
[102] For a more accurate representation of the geographical scope of action see: https://egnos.gsc-europa.eu/egnos-system/about-egnos.
[103] Art. 46, Regulation (EU) 2021/696.

applications, such as aviation, maritime navigation and agriculture. Currently, the EGNOS space segment comprises three GEO satellites and a GPS system, but a more powerful system, EGNOS V3, is under preparation.

2.4.2. Galileo

Galileo was developed in the late 1990s at the initiative of the Commission.[104] Thanks to the Galileo project, the EU has become an independent space actor: unlike EGNOS, the Galileo project was born from the desire not to be dependent on the US GPS system and to have its own navigation system.

Galileo is defined as "an autonomous civil global navigation satellite system (GNSS) under civilian control, which consists of a constellation of satellites, centres and a global network of stations on the ground, offering positioning, navigation and timing services and integrating the needs and requirements of security".[105] The aim of the programme – as for EGNOS – is to provide a secure and independent positioning, navigation and timing service "whilst ensuring service continuity and robustness".[106]

Galileo was built on EGNOS to provide the EU with an independent and autonomous system for positioning, navigation and timing.[107] Galileo is a fully European programme,[108] with the Commission having full responsibility for management, financing and implementation. Its operational management is entrusted to the EUSPA.[109] The ESA's contribution is instead focused on the preparatory R&D activities and the technical development of the infrastructure, as well as on the deployment of the programme. The EU remains the sole owner of the infrastructure and services.

Title VI of Regulation 2021/696 provides more detailed information regarding eligible actions and services provided by Galileo and EGNOS. The services[110] are open service (OS), highly-accuracy service (HAS), signal authentication service (SAS), public regulated service (PRS), emergency service (ES), and timing service (TS). Galileo can also support search and rescue services (SAR) by detecting distress signals.[111] These services can be applied to a wide range of sectors, such as aviation, maritime, agriculture and transport, and can also support emergency activities. PNT systems use constellations of MEO and/or GEO satellites.[112] Galileo is indeed a constellation of 30

[104] Council Resolution of 19 July 1999 on the involvement of Europe in a new generation of satellite navigation services Galileo Definition phase.
[105] Art. 3(1)(a), Regulation (EU) 2021/696.
[106] Art. 4(2)(a), Regulation (EU) 2021/696.
[107] At the beginning, the US government showed some resistance to the creation of Galileo, but then the issues were resolved through an agreement between the EU and the US. On the matter see E. Topcuoglu, S. Bora, *Lessons from EU Space Programmes for Collective Defence*, cit., pp. 426-427.
[108] Galileo involves approximately 150 institutional and industrial partners; it is in fact open to participation to third countries as well, as stated in Art. 7, Regulation (EU) 2021/696.
[109] Arts. 29 and 34, Regulation (EU) 2021/696.
[110] More services are under development, see: https://www.euspa.europa.eu/eu-space-programme/galileo/services.
[111] For detailed description of the services see: Art. 45, Regulation (EU) 2021/696.
[112] ESPI, *Space in Support of Security Missions. An Evolving Landscape with Untapped Potential*, 2022, pp. 1-36, available at: https://www.espi.or.at/reports/space-in-support-of-security-missions-full-report/.

satellites currently, the first two of which were launched in 2011. At the time of writing, 24 satellites are operational.[113]

2.4.3. Copernicus

Copernicus consists "of a complex set of systems that collect data from multiple sources [...] to provide a set of services based on reliable and near-real time information".[114] In 1998, "the European Commission, ESA, EUMETSAT[115] and national space agencies adopted a manifesto for the development of an initiative in the field of earth observation".[116] The Commission adopted several communications regarding the development of a programme on global monitoring for environment and security (GMES). Then, in 2011, the Council and the European Parliament adopted a Regulation on the initial phase of the GMES programme. It was repealed by Regulation (EU) 377/2014, which renamed the programme "Copernicus". The EU owns the Earth observation satellites and the ground sites for most of the programme. However, its management consists of a rather complex institutional architecture. Indeed, the Commission coordinates and manages the programme overall, in cooperation with the ESA and EUMETSAT.[117] Meanwhile, EUSPA is responsible for "promoting the commercialisation of Copernicus data and services".[118] On the other hand, regarding its "security service", in particular the "Copernicus Service in Support to EU External Action",[119] the implementation and coordination are provided by SatCen[120] under a Delegation Agreement.[121] The design implemented for Copernicus has allowed it to "compartmentalise security issues".[122]

Copernicus is composed of several systems in space and *in situ*, such as ground and air-borne sensors, which collect and process data. Data collected from Copernicus sources can be useful in the following areas: environmental monitoring,[123] emergency management services, and security services, already mentioned above. As for the space segment, Copernicus is based on a set of "sentinel" satellites, the first of which was launched in 2014. Currently, there are eight sentinel satellites in orbit,[124] but the EU has started a process to create a complete constellation "with a

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[113] Constellation Information Status, available at: https://www.gsc-europa.eu/system-service-status/constellation-information.

[114] Copernicus website, available at: https://www.euspa.europa.eu/eu-space-programme/copernicus.

[115] The European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) is an intergovernmental organisation based in Germany, with 30 Member States. Its main objectives have been to "establish, maintain and exploit European systems of operational meteorological satellites [...] [and] to contribute to the operational monitoring of the climate and the detection of global climatic changes", Article 1 of the Convention for the Establishment of a European Organisation for the Exploitation Of Meteorological Satellites (EUMETSAT) entered into force on 19 June 1986, including amendments entered into force on 19 November 2000.

[116] V. Reillon , *European Space Policy. Historical Perspective, Specific Aspects and Key Challenges*, cit., pp. 1-35.

[117] Art. 32, Regulation (EU) 2021/696.

[118] Copernicus website, available at: https://www.euspa.europa.eu/eu-space-programme/copernicus.

[119] Art. 51(1)(c), Regulation (EU) 2021/696.

[120] On the role of SatCen, see *infra*, section 3.

[121] Delegation Agreement between the European Commission and SatCen, signed on 6 October 2016.

[122] E. Topcuoglu, S. Bora, *Lessons from EU Space Programmes for Collective Defence*, cit., p. 430; N. Antoni, M. Adriaensen, C. Giannopapa, *Institutional Space Security Programs in Europe*, cit., p. 1198.

[123] Namely, atmosphere monitoring, marine environment monitoring, land monitoring, and climate change. See Art. 51, Regulation (EU) 2021/696.

[124] Copernicus website, available at: https://www.euspa.europa.eu/eu-space-programme/copernicus.

view to providing critical data and information to support European policy priorities and EU user requirements related, for example, to climate change, agriculture, biodiversity, the Arctic, Atlantic and Africa".[125]

2.4.4. GOVSATCOM and Iris2

Another component of the EU Space Programme comprises satellite communication services. These are essential for security-related missions and operations, such as crisis management, border surveillance and protection of critical infrastructure.[126] In the face of an ever-increasing number of private and state actors, cutting edge satellite communications technology, increasing geopolitical instability, climate change as well as the rise of cyber threats,[127] having an autonomous communications system enables the EU to provide governments and businesses with continuity and security regarding SATCOM. Moreover, "SATCOM capabilities embedded with added protection mechanisms (Secure SATCOM) offer an additional layer of resilience, along with robust security features, to guarantee assured access by authorised users only".[128] In the communication sector, the Union has adopted an EU Governmental Satellite Communication (GOVSATCOM) Programme providing secure satellite communications for government operations, to the EU and its Member States, together with national security actors. It collects from government and commercial communication providers, sharing these capabilities with institutional users. It was originally proposed in 2017 by a coordination group of representatives from the Commission, the EDA, the ESA and the EEAS,[129] and was later included in Regulation 2021/696. GOVSATCOM is mainly used for crisis management and surveillance of key infrastructures, namely institutional communications and other vital systems.

In the area of secure satellite communication, Iris^2 (Infrastructure for Resilience, Interconnectivity and Security by Satellite) has been heralded as the EU's answer to new security challenges in space. Regulation 2023/588 established the Union Secure Connectivity Programme (2023-2027),[130] whose general objective is to "ensure the provision and long-term availability within the Union's territory and worldwide uninterrupted access to secure, autonomous, high-quality, reliable and cost-effective satellite governmental communication services to government-authorised users, by establishing a multi-orbital, secure connectivity system under civil control"[131] and to "enable the provision of commercial services, or services offered to government-authorised users based on commercial infrastructure at market conditions, by the private sector in accordance with the Union's applicable competition law, in order to facilitate, inter alia, the further development of worldwide high-speed broadband and seamless connectivity".[132] More specifically, Iris^2 is intended

[125] N. Antoni, M. Adriaensen, C. Giannopapa, *Institutional Space Security Programs in Europe*, cit., p. 1209.
[126] Secure SATCOM website, available at: https://www.euspa.europa.eu/eu-space-programme/secure-satcom.
[127] R. González Muñoz, C. Portela, *The EU Space Strategy for Security and Defence: Towards Strategic Autonomy?*, *Non Proliferation and Disarmament Papers*, No. 83, 2023, p. 6.
[128] Secure SATCOM website, *What is Secure SATCOM?,* available at: https://www.euspa.europa.eu/eu-space-programme/secure-satcom/what-secure-satcom.
[129] European External Action Service, *High Level Civil Military User Needs for Governmental Satellite Communications (GOVSATCOM)*, EEAS(2017) 359.
[130] Regulation (EU) 2023/588 of the European Parliament and of the Council of 15 March 2023 establishing the Union Secure Connectivity Programme for the period 2023-2027.
[131] Art. 3(1)(a), Regulation (EU) 2023/588.
[132] Art. 3(1)(b), Regulation (EU) 2023/588.

to complement and integrate GOVSATCOM components by improving secure connectivity for government actors, increasing competitiveness for the commercial part of GOVSATCOM and ending dead zones in European territories and other strategic areas, such as Africa and Eastern Europe. Iris² would consist of a multi-orbital constellation of satellites combined with ground segments based on a public-private partnership approach.[133]

The Commission launched the procurement process for a concession contract to design, develop and operate Iris², but the process has been far from straightforward. The SpaceRISE Consortium[134] participated in the procurement process and had planned to run the programme, but it failed to meet deadlines and the final proposal was delayed.[135] At the time of writing, the Commission has recently awarded SpaceRISE Consortium the concession contract to develop, deploy and manage Iris². The contract offers a 12-year concession, consisting of a public-private partnership "to acquire a system composed of over 290 satellites on various orbits and the associated ground segment to provide governmental services by 2030 while enabling commercial services".[136]

2.4.5. Space Situational Awareness

Regulation 2021/696 defines SSA as "a holistic approach, including comprehensive knowledge and understanding, of the main space hazards".[137] However, the first reference to the establishment of a European SSA dates back to the early 2010s. In 2011, the Commission adopted a Communication, which marked the beginning of the establishment of a European-wide SSA system.[138] Then, in 2014, the Space Surveillance and Tracking (SST) support programme was adopted.[139] The aim was to combine national SST capabilities to monitor space debris and thus protect space infrastructure. This would be the first strand of a comprehensive SSA capability, which has only been developed in recent years. Shortly thereafter, an SST Consortium was established, initially composed of five members – France, Germany, Italy, Spain and the United Kingdom – which then became eight following the addition, in 2018, of Poland, Portugal and Romania.[140] Since 2016, the SST Consortium has cooperated with SatCen to develop an SST capability.

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[133] On Public-Private Partnerships see *infra*, section 4.4.

[134] The Consortium was created by Airbus Defence and Space, Deutsche Telekom, Eutelsat, Hisdesat, Hispasat, OHB, Orange, SES, Telespazio, Thales Alenia Space and Tales specifically in order to respond to the Iris² tender. See: https://www.spacerise.eu/.

[135] L. Kayali, *Is Iris² heading for a rethink?*, Politico, 25 July 2004, available at: https://www.politico.eu/article/is-iris%c2%b2-dead/.

[136] European Commission, *Iris2 - the European Commission awards the concession contract to SpaceRISE consortium*, 31 October 2024, available at: https://defence-industry-space.ec.europa.eu/iris2-european-commission-awards-concession-contract-spacerise-consortium-2024-10-31_en.

[137] Art. 2(6), Regulation (EU) 2021/696.

[138] Communication from the Commission to the Council, the European Parliament, The European Economic and Social Committee and the Committee of the Regions Towards a Space Strategy for the European Union that Benefits Its Citizens, COM (2011) 152.

[139] Decision No 541/2014/EU of the European Parliament and of the Council of 16 April 2014 establishing a Framework for Space Surveillance and Tracking Support, repealed by Regulation (EU) 2021/696.

[140] States have been represented by their designated national entities; most of the time they have been national Space agencies but also by the Ministries of Defence, as for the case of Portugal. On the matter of governance see: R. Peldszus, P. Faucher, *European Union Space Surveillance & Tracking (EU SST): State of Play and Perspectives, Space Policy*, Vol. 62, 2022, pp. 1-4.

The SST system comprises three levels of activities,[141] which perform three different functions: a sensor function, which is entirely under the responsibility of Member States and the basis for the creation of an EU catalogue of space objects; a processing function, namely the creation of a common platform database; and a service function, performed by specific partners. The SST system provides collision avoidance (CA), re-entry analysis (RE), and fragmentation analysis (FG) services.

With the adoption of Regulation 2021/696, an SSA component has been added to the overall EU Space Programme. The SST Consortium has been replaced by the EU SST Partnership,[142] which collaborates with EUSPA and acts as the EU SST Front Desk from the EU SST Cooperation. The new holistic approach has been built on the previous SST initiative and has been complemented by new activities such as Space Weather Events (SWE) and Near-Earth Object (NEO). On the one hand, the SWE component would develop space weather models, based on new forecasting and impact assessment capabilities. On the other hand, the NEO capability would help monitor the risk of natural space objects approaching the Earth. The SSA Programme relies on a network of lasers, radars and telescopes based around the world and owned by Member States. It ensures that data is processed and provided to European and international users, in accordance with Regulation 2021/696.[143]At the time of writing, more than 200 organisations are using the SSA services.

3. Space as a CSDP Strategic Domain: Between Capability Development and Crisis Management

As mentioned in the introduction, the space domain has gained increasing importance and autonomy in the context of the CSDP. In order to properly understand this phenomenon, it is necessary to briefly recall the essential features of this particular policy area, and subsequently to analyse the relevance of space in this context.

3.1. Key features and tools of the CSDP

The CSDP is described in the TEU as an "integral part" of the Common Foreign and Security Policy (CFSP),[144] a field of EU competence that extends to "all areas of foreign policy and all questions relating to the Union's security, including the progressive framing of a common defence policy that might lead to a common defence".[145] In contrast, national security remains the sole responsibility of each Member State.[146]

[141] Decision-making level, management level and, lastly, working level. For an in-depth analysis, see: M. Becker, P. Faucher, *Recent Developments in the Implementation of European Space Surveillance & Tracking (EU SST)– Security and Data Policy*, *Journal of Space Safety Engineering*, Vol. 8, 2021, pp. 178–181; P. Faucher, R. Peldszus, A. Gravier, *Operational Space Surveillance and Tracking in Europe*, *Journal of Space Safety Engineering*, Vol. 7, 2020, pp. 420–425.

[142] The Partnership currently counts 15 Member States: Austria, Czech Republic, Denmark, Finland, France, Germany, Greece, Italy, Latvia, the Netherlands, Poland, Portugal, Romania, Spain and Sweden.

[143] Title VIII, Regulation (EU) 2021/696.

[144] Art. 42(1), TEU.

[145] Art. 24(2), TEU.

[146] Art. 4(3), TEU.

While the Lisbon Treaty ended the "pillar structure" that had characterised the EU legal edifice since the Maastricht Treaty and integrated the CFSP into the EU constitutional structure,[147] including by providing for principles and objectives that underpin the EU's entire external action,[148] the CFSP and, especially, the CSDP retain important specificities within the system of EU competences. In the wording of the Treaty, the CFSP is "subject to specific rules and procedures",[149] a formula that refers synthetically to the main features of the intergovernmental method: marginalisation of supranational institutions from decision-making, predominance of unanimity over qualified majority voting, restrictions on judicial review.[150]

The separation between CFSP/CSDP and other EU policies is reflected in Article 40 TEU.[151] According to this provision, "[t]he implementation of [CFSP] shall not affect the application of the procedures and the extent of the powers of the institutions laid down by the Treaties for the exercise of the Union competences referred to in Articles 3 to 6 [TFEU]", i.e. other Union policies. Accordingly, the implementation of such policies "shall not affect the application of the procedures and the extent of the powers of the institutions" in the CFSP. By prohibiting the implementation of the CFSP from encroaching on non-CFSP policies and vice versa, this provision appears to rely on a clear separation of the CFSP from other areas of EU competence.[152] In practice, the prohibition of encroachment may prove problematic for measures integrating foreign and security concerns into non-CFSP policies. As the review conducted in this paper shows, recent legislative and institutional practice has consistently moved in that direction, blurring the line between CFSP and non-CFSP measures and calling into question the continued relevance of the demarcation drawn in Article 40 TEU.

3.1.1. Tools for Defence Capability Development: Between Priority Setting and the Permanent Structured Cooperation (PESCO)

As regards the content of the CSDP, the Treaty indicates that the CSDP aims to "provide the Union with an operational capacity drawing on civilian and military assets".[153] The EU's operational

[147] See: C. Eckes, *The CFSP and Other EU Policies: A Difference in Nature?*, *European Foreign Affairs Review*, Vol. 20, 2015, pp. 535-552; M. Cremona, *The Position of CFSP/CSDP in the EU's Constitutional Architecture*, in S. Blockmans, P. Koutrakos (eds), *Research Handbook on the EU's Common Foreign and Security Policy*, Cheltenham, Edward Elgar, 2018, pp. 5-21; G. Butler, *Constitutional Law of the EU's Common Foreign and Security Policy*, Oxford, Hart, 2019.

[148] Art. 21, TEU.

[149] Art. 24(1), TEU.

[150] It is for the European Council to identify the EU strategic interests, define the objectives and the general guidelines of EU action in CSDP (Article 26(1) TEU). On that basis, the Council "shall frame the common foreign and security policy" and adopt the decisions needed for its implementation (Article 26(2) TEU). Unlike in other policy areas, the power of initiative is not held by the Commission, but shared between the Member States and the High Representative for Foreign Affairs and Security Policy. The High Representative is also entrusted with the "conduct" of CFSP (Article 18(2) TEU) and with the implementation of Council decisions together with the Member States (Article 24(1) TEU). Pursuant to Article 24(1) TEU and Article 275 TFEU, the jurisdiction of the Court of Justice of the European Union should be limited to reviewing the legality of sanctions against individuals or legal persons, although the Court has gradually expanded the scope of its competence, ultimately to encompass the review of acts or omissions that are not directly related to political or strategic choices (judgement of 24 September 2024, joined cases C-29/22 P and C-44/22 P, *KS and KD v Council and Others*, para. 117).

[151] P. Koutrakos, *The EU Common Security and Defence Policy*, Oxford University Press, 2013, p. 28.

[152] E. Cannizzaro, *The Value of the EU International Values*, in W. T. Douma, C. Eckes, P. Van Elsuwege, E. Kassoti, A. Ott, R. A. Wessel (eds), *The Evolving Nature of EU External Relations Law*, T.M.C. Asser Press, 2021, p. 13.

[153] Art. 42(1), TEU.

capacity may be deployed in civilian and military missions outside its borders, as explained in the following sub-section. However, in addition to this operational dimension, the CSDP also includes the progressive framing of a common defence policy[154] and the collaborative development of military capabilities.

The instruments available for these purposes are partly outlined explicitly in the EU Treaty, such as the competences of the European Defence Agency (EDA) and Permanent Structured Cooperation (PESCO), and partly have developed through institutional practice beyond the wording of the Treaty.

The competences of the EDA, a specialised agency of the European Union established in 2004 and now regulated by Articles 42(3)(2) and 45 TEU and Council Decision (CFSP) 2015/1835,[155] include identifying Member States' military capability goals, promoting the harmonisation of operational requirements, and fostering cooperation between Member States on research, development and acquisition. For example, the EDA drafts, in consultation with the European Union Military Staff (EUMS), the Capability Development Plan (CDP, last updated in 2023) with the aim of identifying priorities in the development of Member States' defence capabilities.[156] Although it does not entail binding commitments, the CDP forms the basis for other defence policy coordination measures of the EU and is referred to in other CSFP initiatives, such as PESCO.

The need for better coordination of Member States' defence planning led in 2017 to the establishment of the Coordinated Annual Review on Defence (CARD), a process of periodic review of Member States' defence capabilities and planning.[157] The EDA acts as the CARD secretariat in conjunction with the EUMS.

The Agency also manages research and development programmes, although the establishment of the European Defence Fund (EDF)[158] and its subsequent funding instrument has concentrated most of the EU's effort in supporting the European Defence Technological and Industrial Basis (EDTIB) directly in the context of the single market and industrial policy, and has shifted the balance of managing defence research and development programmes towards the Commission.[159]

In contrast to CARD and the drafting of CDP, PESCO is not a form of policy coordination but a tool for collaborative development of military capabilities. The Treaty describes PESCO as a cooperation to be established within the EU by "[t]hose Member States whose military capabilities fulfil higher criteria and which have made more binding commitments to one another in this area with a view

[154] Art. 24(1), TEU.

[155] Council Decision (CFSP) 2015/1835 of 12 October 2015 defining the statute, seat and operational rules of the European Defence Agency.

[156] European Defence Agency, *Capability Development Plan*, EDA website, available at: https://eda.europa.eu/what-we-do/all-activities/activities-search/capability-development-plan.

[157] European Defence Agency, *Coordinated Annual Review on Defence*, EDA website, available at: https://eda.europa.eu/what-we-do/EU-defence-initiatives/coordinated-annual-review-on-defence-(card).

[158] Regulation (EU) 2021/697 of the European Parliament and of the Council of 29 April 2021 establishing the European Defence Fund and repealing Regulation (EU) 2018/1092.

[159] A. Miglio, G. Perotto, L. Grossio, *I meccanismi di finanziamento del settore difesa nell'Unione europea e il loro contributo al rafforzamento dell'autonomia strategica*, *CSF Research Paper*, pp. 37-38, available at: https://www.csfederalismo.it/images/2024/Research-paper/RP-CSF_Finanziamento-difesa-Ue_Miglio_Perotto_Grossio_Gennaio2024.pdf.

to the most demanding missions".[160] The criteria and commitments are defined, albeit in often vague language, by the Protocol (No. 10) on permanent structured cooperation. Since PESCO was launched in December 2017, the Council has adopted several decisions specifying its objectives and the commitments of participating Member States,[161] its governance structure[162] and the conditions for the participation of third countries in selected PESCO projects.[163]

As part of the CSDP, PESCO is an EU initiative, unlike other instruments for defence cooperation that groups of Member States have sometimes pursued at the margins of the EU framework.[164] Compared to *ad hoc* arrangements, PESCO offers the advantages of a unitary framework, potentially reducing transaction costs and enhancing consistency,[165] and of higher rates of financing from the EU budget thanks to the linkage between PESCO and the EDF.[166] However, as consistently underlined in Council documents, PESCO remains a Member State-driven process. Firstly, participation is voluntary and differentiated. While currently all Member States except Malta participate in PESCO, its structure is highly modular.[167] In addition to the commitments shared by all participating Member States, the implementation of PESCO consists of numerous projects for the collaborative development of military capabilities. Participating Member States therefore engage in projects on a voluntary basis, resulting in varying degrees of involvement for different groups of Member States.[168] Secondly, while the Council decides by qualified majority on the establishment of PESCO and on the accession of other Member States to the ongoing cooperation,[169] decisions on its implementation are taken by unanimity, with voting rights in the Council limited to participating Member States.[170] Unanimity is also the rule in the governance of specific PESCO projects. Finally, unlike EU space assets, the capabilities developed through PESCO belong to Member States, which also retain control over their operational deployment.

3.1.2. Tools for Crisis Management: CSDP Missions and Operations

Alongside the development of a common defence policy and the strengthening of Member States' defence capabilities, CSDP includes an operational dimension, which has long been its dominant

[160] Art. 42(6), TEU.
[161] Council Decision (CFSP) 2017/2315 of 11 December 2017 establishing permanent structured cooperation (PESCO) and determining the list of participating Member States.
[162] Council Decision (CFSP) 2018/909 of 25 June 2018 establishing a common set of governance rules for PESCO project.
[163] Council Decision (CFSP) 2020/1639 of 5 November 2020 establishing the general conditions under which third States could exceptionally be invited to participate in individual PESCO projects.
[164] A. Miglio, G. Perotto, *EU Law and inter se Agreements in Defence Matters: Mapping the Interplay*, *Perspectives on Federalism*, Vol. 14, Issue 3, 2022, available at: https://on-federalism.eu/images/2022/Vol14_issue3/PoF_2022_Vol14-3_Miglio-Perotto.pdf.
[165] S. Biscop, *European Defence and PESCO: Don't Waste the Chance*, *EUIDEA Policy Papers*, No. 1, 2020, https://www.iai.it/sites/default/files/euidea_pp_1.pdf.
[166] E. Simon, A. Marrone, *Linking PESCO and EDF: Institutional Mechanisms and Political Choices*, ARES Report No. 66, 2021, https://www.iris-france.org/wp-content/uploads/2021/05/66-Report-PESCO-EDF-April-2021.pdf.
[167] S. Blockmans, *The EU's Modular Approach to Defence Integration: An inclusive, ambitious and legally binding PESCO?*, *Common Market Law Review*, Vol. 55 No. 6, 2018, pp. 1785-1826.
[168] See: S. Blockmans, D. Macchiarini Crosson, *PESCO: A Force for Positive Integration in EU Defence*, *European Foreign Affairs Review*, Vol. 26, 2021, pp. 87-110; A. Koudé, R. A. Wessel, *A* Common *Security and Defence Policy: Limits to Differentiation in PESCO?*, *European Papers*, Vol 7, 2022, pp. 1325-1356, esp. pp. 1342-1343.
[169] Art. 46(2-4), TEU.
[170] Art. 46(6), TEU.

component. Indeed, one of the main objectives of CSDP is to "provide the Union with an operational capacity drawing on civilian and military assets", which "[t]he Union may use [...] on missions outside the Union for peace-keeping, conflict prevention and strengthening international security in accordance with the principles of the United Nations Charter" (Article 42(1) TEU).

This formula reflects the expectation that the EU can play a major role in managing international crises in third countries, in line with the reorientation of the security policy of most Member States from territorial defence to peacekeeping and crisis management in third countries after the end of the Cold War. Article 43 TEU lists in greater detail the objectives that EU missions and operations may pursue.

It is worth noting that CSDP is not limited to military missions and operations, but also includes civilian missions.[171] Indeed, civilian missions outnumber military missions and operations, and their objectives range from training police forces to strengthening the rule of law and assisting local authorities in improving border security. In practice, a distinction has also emerged between military missions and operations. The former provide support to third countries, typically in training their armed forces, while the latter are more ambitious. In particular, the EU is currently conducting the EUNAVFOR MED IRINI operation, deployed in the Mediterranean Sea with the enforcement of the arms embargo on Libya as its primary goal;[172] the EUNAVFOR ATALANTA operation, which contributes to the protection of vessels from acts of piracy off the coast of Somalia;[173] and the recently established EUNAVFOR ASPIDES operation for the protection of shipping in the Red Sea.[174]

3.2. The Strategic Nature of Space for CSDP Objectives

Within the CSDP, space has progressively emerged as a domain in its own right, reflecting a global trend in the evolution of military doctrine exemplified by the establishment in 2019 of the US Space Force and an autonomous Space Command within the US Department of Defence.

The 2016 Global Strategy, which for six years provided the blueprint for EU action in foreign and security policy, only mentioned the space domain in passing, noting its importance for cybersecurity.[175] In contrast to the Global Strategy, the 2022 Strategic Compass for Security and Defence was drafted in a geopolitical context where the importance and sensitivity of outer space for security and defence had increased massively. As a result, it reserves a much more prominent place for space, outlining challenges and lines of action.

The Strategic Compass notes that access to the space domain is central to the EU's freedom of action in the international arena and that dependence on space systems and services increases

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[171] A.E. Juncos, *Civilian CSDP Missions: 'The Good, the Bad and the Ugly'*, in S. Blockmans, P. Koutrakos (eds), *Research Handbook on the EU's Common Foreign and Security Policy*, cit., pp. 89-110.

[172] Council Decision (CFSP) 2020/472 of 31 March 2020 on a European Union military operation in the Mediterranean (EUNAVFOR MED IRINI).

[173] According to the mandate last updated by Art. 1 of Council Decision (CFSP) 2024/1059 of 4 April 2024 amending Joint Action 2008/851/CFSP on a European Union military operation to contribute to maritime security in the West Indian Ocean and in the Red Sea (EUNAVFOR ATALANTA). For further information, see the operation's official website, available at: https://eunavfor.eu/mission.

[174] Council Decision (CFSP) 2024/583 of 8 February 2024 on a European Union maritime security operation to safeguard freedom of navigation in relation to the Red Sea crisis (EUNAVFOR ASPIDES).

[175] A Global Strategy for the European Union's Foreign and Security Policy, available at: https://www.eeas.europa.eu/eeas/global-strategy-european-unions-foreign-and-security-policy_en.

vulnerability to threats. It emphasises that the EU's "freedom of action depends on safe, secure and autonomous access to the space domain", which should become "a more competitive and contested space environment".[176] In this context, while acknowledging the importance of the EU Space Programme and civilian control of EU space assets, the Strategic Compass identifies "a pressing need to complement the current space strategy and enhance the security and defence dimensions of the Union in space".[177]

To this end, it envisages the adoption of an EU Space Strategy for Security and Defence (finally published by the Commission and the HR/VP in 2023) to promote a common understanding of space-related risks and threats, foster the development of responses to crises, and strengthen resilience.[178] The Strategic Compass also identifies SSA, autonomous access to space, protection of supply chains and space traffic management as specific concerns to be addressed. It also foresees "exercises to test the resilience of [EU] space assets", with a view to improving the ability to respond to space-related threats[179] and contains a commitment to further invest in strategic enablers, including space-based connectivity and communication assets.[180] Finally, space features under the "Invest" chapter of the Strategic Compass, where the development of new sensors and platforms is mentioned as key to improving access to space and protecting space-based assets for the EU and its Member States.[181]

3.3. The Space Dimension of CSDP Capability Development

In line with the policy developments announced in the Strategic Compass, space has also been given increasing importance in CSDP policy planning and in capability development.

3.3.1. Key Priorities for the Space Domain under the 2023 Capability Development Plan and CARD

The 2018 CDP identified a list of 11 priorities, including the development of "space-based information and communication services",[182] comprising: 1) Earth observation; 2) positioning, navigation and timing; 3) space situational awareness; and 4) satellite communication. The 2023 CDP review significantly increased the relevance of space, for which the CDP report includes two distinct priorities. The first priority is "space operations", described as encompassing "the launch, early-orbit, monitoring, management, execution, and protection of activities related to space missions and assets, ensuring their successful implementation and long-term sustainability in space".[183] Space operations cover three "key areas": space situational awareness (SSA), access to space and the protection of space systems from interference and attack.

The second space priority of the 2023 CDP is called "space services". This refers to the use of space-based technologies (Earth observation, satellite communication and positioning, navigation and

[176] A Strategic Compass for Security and Defence, p. 23, available at: https://data.consilium.europa.eu/doc/document/ST-7371-2022-INIT/en/pdf.
[177] *Ibid*.
[178] *Ibid*., pp. 23 and 28.
[179] *Ibid*., p. 24.
[180] *Ibid*., p. 31.
[181] *Ibid*., p. 33.
[182] European Defence Agency, *The 2023 EU Capability Development Priorities*, 2023, available at https://eda.europa.eu/docs/default-source/brochures/qu-03-23-421-en-n-web.pdf, p. 14.
[183] *Ibid*., p. 17.

timing) as enablers to support military operations. It therefore expressly foresees that civilian assets, notably those developed and managed under the EU Space Programme, can be used for military purposes.

Defence in space has also been identified as one of the six capability focus areas in the CARD reports. In particular, the 2022 CARD Report emphasised the need for greater civilian-military cooperation in the space sector and the complementarity of EU Space Programmes with national capabilities and services, with a view to establishing "a holistic EU Space capability".[184]

3.3.2. The Development of Space Defence Assets in the PESCO Framework

In line with the increasing focus on space in the CSDP, the space domain is one of the seven areas to which PESCO projects can be related. Out of a total of 68 PESCO projects, four are classified under "Space".

The Common Hub for Governmental Imagery (COHGI) project[185] aims to establish a common hub to facilitate the exchange of classified governmental imagery between Member States and EU organisations, in cooperation with the EU SatCen. The project is coordinated by Germany and has eight participating Member States (Austria, France, Germany, Lithuania, Luxembourg, the Netherlands, Romania and Spain).

Another five Member States (France, Germany, Italy, the Netherlands, Spain) are involved in the development of the European Military Space Surveillance Awareness Network (EU-SSA-N),[186] with Italy as the project coordinator. EU-SSA-N is defined as "an autonomous, sovereign EU military SSA capability that is interoperable, integrated and harmonised with the EU-SST Framework initiative for the protection of European MS Space assets and services".

The Defence of Space Assets (DOSA) project[187] aims to increase the EU's operational efficiency in the space domain by making use of existing and future space assets. Eight Member States (Austria, France, Germany, Italy, Portugal, Romania, Spain) participate in this French-led project, which potentially provides another example of primarily civilian space assets integrated into the CSDP and used for defence purposes.

Eight Member States (Austria, Belgium, Germany, France, Italy, Poland, Spain, Sweden) participate in the EU Radio Navigation Solution (EURAS) project[188] for the development of EU military PNT (positioning, navigation and timing) capabilities, with France as the project coordinator.

A common thread of the PESCO 'space' projects is the relatively constant participation of large Member States with a sizable defence industry, a well-developed space policy and a significant

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[184] European Defence Agency, *2022 Coordinated Annual Review on Defence Report*, 2022, available at: https://eda.europa.eu/docs/default-source/eda-publications/2022-card-report.pdf.

[185] Permanent Structured Cooperation, *Common Hub for Governmental Imagery (COHGI)*, available at: https://www.pesco.europa.eu/project/common-hub-for-governmental-imagery-cohgi/.

[186] Permanent Structured Cooperation, *European Military Space Surveillance Awareness Network (EU-SSA-N)*, available at: https://www.pesco.europa.eu/project/european-military-space-surveillance-awareness-network-eu-ssa-n/.

[187] Permanent Structured Cooperation, *Defence of Space Assets (DOSA)*, available at: https://www.pesco.europa.eu/project/defence-of-space-assets-dosa/.

[188] Permanent Structured Cooperation, *EU Radio Navigation Solution (EURAS)*, available at: https://www.pesco.europa.eu/project/eu-radio-navigation-solution-euras/.

foreign policy projection. Another feature, which is particularly interesting for the purposes of this paper, is the clear synergy envisaged between these collaborative projects of Member States and the functioning of the EU Space Programme. In particular, the EU-SSA-N project is relevant insofar as it could complement the EU SSA capability within the Space Programme.[189]

3.4. The Union Space Assets Supporting CSDP Crisis Management: The Role Played by the EU Satellite Centre (SatCen)

The services supplied by space assets, including satellite and aerial imagery, constitute a key tool for the operational dimension of the CSDP. On the one hand, they support the decision-making process by providing essential information for early warning and planning activities in the context of crisis management procedures.[190] On the other hand, space services support the conduct of CSDP missions and operations by providing Union forces on the ground and their chain of command with geospatial information. The strategic nature of space assets for security and defence operations explains why the Union has created a dedicated agency under the CFSP: the EU Satellite Centre (SatCen).

Established in 2001 and located in Torrejón de Ardoz (Spain), SatCen inherited the functions performed by the body of the same name previously operating within the Western European Union (WEU). As the WEU did not have its space programme, space services provided by SatCen depended on imagery provided by commercial and Member States' assets.[191] Twenty-three years after its incorporation into the Union's CFSP, SatCen's capacity to provide space services has been significantly strengthened by the possibility of relying not only on commercial and Member States' assets but also on sensors operating within the EU Space Programme.[192] The current governance structure and tasks of Satcen are laid down in Council Decision 2014/401/CFSP.[193] As a CFSP agency, SatCen is directed by the High Representative, who ensures operational direction and chairs the Board of the Centre.[194] The Board is composed of a representative from each Member State and the Commission[195] and is responsible for taking decisions critical to the Centre's functioning and the fulfilment of its tasks, including the adoption of its budget. The latter is composed of financial contributions by the Member States determined according to their gross national income, as well as *ad hoc* payments for space services provided to users.[196] According to the latest available activity report, the growing demand for space services in the current geopolitical scenario has led to an

[189] See *infra*, section 4.1.4.
[190] Rec. 2, Council Joint Action 2001/555/CFSP of 20 July 2001 on the establishment of a European Union Satellite Centre.
[191] A. Kolovos, *Development of a Space Security Culture: Case of Western European Union,* in K.-U. Schrogl (ed.), *Handbook of Space Security: Policies, Applications and Programs*, Springer, 2020, pp. 401-419.
[192] These are Sentinel-1, Sentinel-2 and Sentinel-3; further on this point, see SatCen Annual Report 2023, p. 25, available at: https://www.satcen.europa.eu/keydocuments/AnnualReport_2023_WebVersion%2026630a9dbb6f5c46cec3bde2c.pdf.
[193] Council Decision 2014/401/CFSP of 26 June 2014 on the European Union Satellite Centre and repealing Joint Action 2001/555/CFSP on the establishment of a European Union Satellite Centre.
[194] *Ibid.*, Arts. 4 and 6.
[195] *Ibid.*, Art 6.
[196] *Ibid.*, Art. 4(3).

increase in SatCen's revenues through national contributions exceeding 12% of its General Budget.[197]

The day-to-day administration is ensured by a Director, appointed by the Board based on nominations submitted by Member States.[198] All activities carried out by SatCen are subject to political supervision by the Political and Security Committee (PSC) under the responsibility of the Council.[199]

As highlighted in the 2023 European Union Space Strategy for Security and Defence, "SatCen provides a unique geospatial intelligence analysis capability to support high-level decision-making and action of the EU and its Member States".[200] More specifically, it leverages EU, national and commercial assets to provide products and services at the request of the Council or the High Representative.[201] In the security and defence fields, SatCen carries out three key activities.

Firstly, since 2016, the Centre has implemented the Copernicus Security Service Component on Support to EU External Action.[202] Under the terms of the 2016[203] and 2023[204] Delegation Agreements with the Commission, SatCen qualifies as an Entrusted Entity for the management and implementation of Copernicus geospatial components supporting the Union's external action. Since 2023, the component implemented by SatCen has been renamed "Support to EU External and Security Actions" (SESA). Compared to the previous approach, SESA addresses new areas that have emerged from the evolution of user needs and service activities.[205] These are, notably, Security of EU Citizens, Humanitarian Aid, Crisis and Conflict, Stability and Resilience for Development, International Trade and Economic Diplomacy, as well as cutting-edge challenges such as Health Security, Environmental Compliance and Climate Security.[206] These areas go beyond the CFSP domain and demonstrate an intricate link with, on the one hand, the Union's internal and

[197] SatCen Annual Report 2023, cit., p. 51.
[198] Art. 7, Council Decision 2014/401/CFSP.
[199] *Ibid.*, Art 3(1).
[200] Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council, European Union Space Strategy for Security and Defence, JOIN(2023) 9, p. 11.
[201] Art. 28(1), Council Decision 2014/401/CFSP..
[202] The other components of the Copernicus Security Service are Border Surveillance (CBS) and Maritime Surveillance (CMS). See Copernicus, *Copernicus Services: Security*, available at https://www.copernicus.eu/en/copernicus-services/security.
[203] Copernicus, *Copernicus SatCen Delegation Agreement signed yesterday,* 7 October 2016, available at https://www.copernicus.eu/en/copernicus-satcen-delegation-agreement-signed-yesterday.
[204] On this point, see Commission, *Signature of the contribution agreement for the implementation of the Copernicus Security Service component on Support to EU External and Security Actions (SESA)*, 30 August 2023, available at https://defence-industry-space.ec.europa.eu/signature-contribution-agreement-implementation-copernicus-security-service-component-support-eu-2023-08-30_en.
[205] SatCen, *SatCen signs the Contribution Agreement for the implementation of the Copernicus Service in Support to EU External and Security Actions (SESA)*, available at: https://www.satcen.europa.eu/Pages/satcen-signs-the-contribution-agreement-with-the-european-commission-for-the-implementation-of-the-copernicus-service-in-support-to-eu-external-and-security-actions-sesa.
[206] *Ibid.* In particular, the SatCen 2023 Annual Report underlines that "Environmental compliance is becoming a pillar Application Area for EU interests. [...] Copernicus SESA products provided evidence of infringements of environmental laws and were able to conduct the assessments of environmental damage based on EO data", SatCen Annual Report 2023, cit., p. 33.

external security and, on the other hand, its external action.[207] Member States and EEAS are the end-users of the Service, as their requests addressed to the SatCen accounted for 63% and 37% respectively of the 2023 SESA activations.[208]

Secondly, SatCen leverages space assets to provide geospatial intelligence products for CSDP missions and operations. These products are made available both in the planning and conduct phases of CSDP missions and mainly consist of analysis services for space situational awareness.[209] According to the most recent data,[210] the largest share of these services has supported the activities of EUNAVFORMED IRINI and EUNAVFOR Somalia - Operation ATALANTA. As regards civilian CSDP missions, the EU Monitoring Mission (EUMM) in Georgia and EU Mission (EUMA) in Armenia are among the main beneficiaries of space situational awareness products provided by SatCen. The latter mission has also benefited from the Centre's support in its planning phase, similarly to EUNAVFOR Aspides.[211] Products and services supporting missions and operations now represent a significant share of SatCen's overall activities, reaching 13,9% in 2023.[212]

Finally, SatCen's satellite imagery and services support the activities carried out by the EEAS Single Intelligence Analysis Capacity (SIAC). The Capacity combines the contribution of civilian and military intelligence, provided by the EU Intelligence Centre and the EU Military Staff Intelligence,[213] to identify and assess security threats to the Union and its Member States, thus contributing to early warning for crisis management. Interestingly, SatCen transparency protocols require that each report produced for the SIAC to be made available to Member States and vice versa, thereby avoiding duplication of requests. Therefore, SIAC and national requests for space products and services should be considered as aggregated, and together they constitute the most significant portion – 62.9% of SatCen's activities.[214]

It follows that the EU Satellite Centre represents a key player in the operational dimension of the CSDP, providing invaluable support to the Union's action in the field of security and defence.[215] However, CSDP is not the only field of action for the Centre. Despite being a CFSP agency, SatCen represents a gateway for other Union bodies and agencies that rely on space services for their tasks. This is the case, in particular, of Frontex, which not only implements the Border Surveillance component of the Copernicus Service for Security, but also relies on SatCen's space products and

[207] SatCen Annual Report 2023, cit., p. 33.
[208] *Ibid.*, p. 24.
[209] *Ibid.*, p. 19.
[210] *Ibid.*, pp. 19 and 22.
[211] *Ibid.*, p. 22.
[212] *Ibid.*, p. 20.
[213] European External Action Service, *Memo - Questions and answers: Threat Analysis – a background for the Strategic Compass*, available at: https://www.eeas.europa.eu/sites/default/files/2020_11_20_memo_questions_and_answers_-_threat_analsysis_-_copy.pdf.
[214] SatCen Annual Report 2023, cit., p. 20.
[215] To perform these tasks, SatCen relies on longstanding cooperation with EDA, covering a variety of projects involving Intelligence, Surveillance and Reconnaissance, Satellite Communication, Space Situational Awareness and critical space technologies. In literature, see: A. Papadimitriou, M. Adriaensen, N. Antoni, C. Giannopapa, *Perspective on Space and Security Policy, Programmes and Governance in Europe*, *Acta Astronautica*, Vol. 161, 2019, p. 187.

services for situational awareness and monitoring of migration flows.[216] The Centre's budgetary architecture testifies to the impact of SatCen's cooperation with other Union agencies and organisations. The former is mainly composed of contributions from Member States. Nevertheless, the Commission contributes to the recovery of costs resulting from SatCen's support to other EU programmes through resources from the EU budget. As outlined in the literature, in 2019, only 40% of SatCen's revenues came from national contributions, with the remaining resources being derived from other sources, most notably from the Commission.[217] Cooperation by SatCen also extends to third countries and other international organisations that may have access to its products and services, provided that an *ad hoc* administrative arrangement is negotiated and concluded by the Centre.[218]

3.5. The CSDP Crisis Management Framework Ensuring the Security of the Union's Space Assets

The previous section examined the strategic relevance of space assets for the Union's actions under the CSDP. This section will focus on the complementary perspective, as the relationship between EU space assets and the CSDP is two-fold. While geospatial intelligence supports CSDP tools, the latter contributes to protecting EU space assets from potential threats. In this vein, a specific response mechanism has been established in the framework of the CSDP and tested through annual exercises (3.6.1), thus demonstrating the particular sensitivity of space assets for the Union's security (3.6.2).

3.5.1. The CSDP Space Threat Response Mechanism

The response mechanism to threats to space security is defined by Council Decision 2021/698/CFSP, adopted to establish a unified framework for protecting all assets of the EU Space Programme. Indeed, the previous mechanism regulated by Council Decision 2014/496/CFSP[219] only applied to the European Global Navigation Satellite System (GNSS), commonly known as Galileo.[220] Following the establishment of the EU Space Programme by Regulation (EU) 2021/696, the previous procedures have been updated and extended to cover threats against all sensors and assets relevant to the Programme.[221] The scope of strategic assets covered by the mechanism is currently defined by the Committee assisting the Commission in the implementation of the EU Space Programme Regulation.[222]

Before delving into the analysis of the operational response system, a preliminary question needs to be addressed: what is a 'space threat'? Council Decision 2021/698/CFSP does not provide a clear definition. It merely states that procedures established therein aim to avert "a threat to the security of the Union or of one or more of its Member States or to mitigate serious harm to the essential

[216] SatCen Annual Report 2023, cit., p. 23.
[217] E. Topcuoglu, S. Bora, *Lessons from EU Space Programmes for Collective Defence*, cit., p. 432.
[218] Arts. 19 and 20, Council Decision 2014/401/CFSP.
[219] Council Decision 2014/496/CFSP of 22 July 2014 on aspects of the deployment, operation and use of the European Global Navigation Satellite System affecting the security of the European Union and repealing Joint Action 2004/552/CFSP.
[220] See *supra*, section 2.4.1.
[221] Rec. 6, Council Decision 2021/698/CFSP.
[222] Established by Art. 107(1)(e), Regulation (EU) 2021/696.

interests of the Union or of one or more of its Member States arising from the deployment, operation or use of the systems set up and services provided under the components of the Union Space Programme" or "a threat to the operation of any of those systems or the provision of those services".[223] This provision appears to clarify that a threat to the functioning of space assets and services is capable of compromising the security of the Union and its Member States. However, it does not clarify which phenomena fall within the definition of a 'space threat', a concept which therefore remains inherently elusive.

Therefore, further analysis is needed to define a 'space threat'. As anticipated in the introduction, Space Policy enables the EU to be autonomous and to rely on efficient information and data in the execution of its external action.[224] Any detriment affecting the functioning and operability of space sensors therefore risks compromising the Union's ability to act. As early as 2007, the Commission observed in its European Space Policy Communication that Europe faces threats which are constantly evolving and are "more diverse, less visible and less predictable".[225] In this context, the 2016 Space Strategy provides a provisional definition of space threats. As the space domain becomes increasingly contested by a growing number of actors, specific attention is given to space debris, cyber threats and the impact of space-meteorological phenomena.[226] However, this list of threats is not exhaustive. As highlighted by Council Decision 2021/698, elements posing a threat not only to the space assets of the Union, but also to the Union itself and its Member States, must be considered as space threats.

The 2021 European Space Programme provides further elements in this respect.[227] Once again, space debris is mentioned among the main threats to the security and safety of space activities, together with space weather events that can jeopardise the operations of space and ground infrastructures. In addition to the threats specifically related to space, the Programme highlights the instrumental nature of space programmes and infrastructures for the prevention of regional conflicts, terrorism, cyber threats, and the pressures of increasing migration. In performing all these tasks, the proper functioning and monitoring of the different space programmes is crucial.[228] This aspect is further emphasised in the 2022 Strategic Compass, which defines space as a strategic domain for the CSDP, as well as in the 2023 Space Strategy for Security and Defence. The latter policy document marks an important shift in the conceptualisation of space threats. Indeed, it advances a distinction between natural hazards originating from space and intentional hostile activities carried out through counter-space capabilities.[229] The counter-space capabilities can take different forms, from kinetic attacks to directed energy and cyber-attacks. They can be directed

[223] Art. 1, Council Decision 2021/698/CFSP.
[224] Communication from the Commission to the Council and the European Parliament, European Space Policy, 26/04/2007, cit., p. 4.
[225] *Ibid.*, p.7.
[226] Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council, European Union Space Strategy for Security and Defence, JOIN(2023) 9, p. 9.
[227] European Commission, European Space Programme, available at https://defence-industry-space.ec.europa.eu/eu-space/eu-space-programme_en.
[228] Recs. 83, 88, 97 and 98, Regulation (EU) 2021/696.
[229] Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council, European Union Space Strategy for Security and Defence, JOIN(2023) 9, p. 2.

against specific space or ground assets and infrastructures, or they can interfere with the entire space sector, for example, by jamming radio frequencies. The aim, therefore, is to "intentionally disrupt, degrade, destroy, deceive, or deny the use of space systems, and to inspect, manipulate, eavesdrop, or intercept corresponding data as well as deny access or freedom of movement in the space domain",[230] leading also to irreversible effects.

It follows that the concept of 'space threat' covers hostile foreign actions capable of compromising the functioning of the Union's and Member States' space assets. The scope of the latter must be interpreted broadly: as most space technologies are dual-use, the Strategy clarifies that "what constitutes a space threat cannot be identified by observing space objects, technologies or space capabilities in isolation, but by taking into account behaviour".[231] Therefore, the behaviour of other States operating in space shall be taken into consideration in order to assess whether an action potentially affecting space assets actually constitutes a threat.

The CSDP response framework to space threats is centralised. It assigns key decision-making powers to the High Representative and the Council, exercised through an intergovernmental process consistent with the nature of the CFSP. In particular, should Member States, the Commission, the EUSPA, or any security monitoring entity established under the Space Programme detect a potential threat, they shall inform the High Representative.[232] The latter must immediately inform the Council[233] and propose the appropriate response. The proposals from the High Representative consist of instructions directed to the EUSPA or other competent bodies in response to the threat and shall be based on inputs from the Commission, the EUSPA and other monitoring entities of the Space Programme.[234] They shall be accompanied by an impact assessment and evaluated by the PSC. The Council shall then adopt the proposed instructions unanimously.[235]

The procedural requirements for acting under the Council Decision, particularly the need for unanimity in the Council, could render the whole mechanism lengthy and thus unsuitable for responding to space threats. However, the Council Decision itself provides two tools to streamline the decision-making process in a security threat scenario. Firstly, the High Representative must prepare standard operating procedures for the implementation of the mechanism in case of threats to assets classified as sensitive by the above-mentioned Committee.[236] Standardised protocols may include predefined instructions for responding to security threats[237] and must be approved by the PSC. This arrangement can help overcome obstacles in reaching consensus in the Council and avoid lengthy consultations at the proposal stage as the response has been developed and already agreed by Member States' representatives in the PSC.

Secondly, where the adoption of predefined instruction is not sufficient to ensure a timely response, the Council Decision provides for a fast-track procedure. In urgent circumstances

[230] *Ibid.*
[231] *Ibid.*
[232] Art. 2(1), Council Decision (CFSP) 2021/698.
[233] *Ibid.*, Art. 2(2).
[234] *Ibid.*, Art. 3(2).
[235] *Ibid.*, Art. 3(1).
[236] *Ibid.*, Art. 5(1).
[237] *Ibid.*, Art. 5(2).

requiring immediate action, the High Representative can issue appropriate instructions to the competent agencies or organisations.[238] Such measures are provisional and must be communicated immediately to the Commission and the Council. The latter is required to confirm, amend or revoke the High Representative's instructions as soon as possible.[239]

3.5.2. The Response Mechanism in Action: Experience Gained from Space Threat Architecture Exercises and Potential Amendments

The successful implementation of the mechanism outlined above depends on an efficient and rapid response from all actors involved. To improve its preparedness for these scenarios, the EEAS has so far conducted six live exercises, organised jointly with the Commission and the EUSPA. Space Threat Architecture Exercises simulate a threat against EU and Member States' space assets that could harm the security or essential interests of the Union or its Member States,[240] thus triggering a response under Council Decision 2021/698/CFSP. The last two editions, held in 2023 (STRA-23)[241] and 2024 (STRA-X-24),[242] focused on hybrid threat scenarios "reflect[ing] the current geopolitical landscape and emerging Space threats".[243] In both cases, the triggering event was an attack against EU satellites, specifically targeting Galileo's sensors. The exercises involved close cooperation between EU actors (Council, High Representative, EEAS, EUSPA, Commission and Galileo Security Monitoring Centre (GSMC)) and Member States. In particular, the Italian and Spanish chain of command was activated during the 2023 Exercise (STRA-23) as the two Member States host Galileo's capabilities.[244] This is indicative of the key role played by national command and control components for the adequate protection of space assets. Indeed, the involvement of EU and Member States' assets requires effective cooperation between the two levels of governance to ensure a coordinated response. In the same spirit of cooperation, in the 2024 edition of the exercise several Member States contributed with Space Domain Awareness (SDA)[245] information to detect the simulated threat.[246]

Since the 2023 edition, the operations have been followed by a table-top exercise and a discussion at the Council level, aimed at exploring potential ways to improve the effectiveness of the EU's response. On that occasion, Member States and the High Representative discussed the possibility

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[238] *Ibid.*, Art. 4(1).
[239] *Ibid.*, Art. 4(3).
[240] *Ibid.*, Art. 1(1)(a).
[241] EEAS, *Space: EU tests its response mechanism to threats*, 15 March 2023, available at https://www.eeas.europa.eu/eeas/space-eu-tests-its-response-mechanism-threats_en#:~:text=From%206%20to%2010%20March,the%20Political%20and%20Security%20Committee.
[242] EEAS, *Space: EU carries out Space Threat Response Architecture 2024 Exercise (STRA-X-24)*, 13 March 2024, available at: https://www.eeas.europa.eu/eeas/space-eu-carries-out-space-threat-response-architecture-2024-exercise-stra-x-24_en.
[243] *Id.*
[244] EEAS, *Space: EU tests its response mechanism to threats*, 15 March 2023, available at: https://www.eeas.europa.eu/eeas/space-eu-tests-its-response-mechanism-threats_en#:~:text=From%206%20to%2010%20March,the%20Political%20and%20Security%20Committee.
[245] Space Domain Awareness (SDA) is a military term which defines a state's ability to rapidly detect, warn, monitor, attribute and predict threats to its space systems. See *infra*, section 4.1.5.
[246] EEAS, *Space: EU carries out Space Threat Response Architecture 2024 Exercise (STRA-X-24)*, 13 March 2024, available at: https://www.eeas.europa.eu/eeas/space-eu-carries-out-space-threat-response-architecture-2024-exercise-stra-x-24_en. On the contribution of national assets to the operational dimension of the EU Space Policy, see *infra*, section 4.4.

of activating the mutual defence assistance clause enshrined in Article 42(7) TEU. This provision stipulates that "[i]f a Member State is the victim of armed aggression on its territory, the other Member States shall have towards it an obligation of aid and assistance by all the means in their power, in accordance with Article 51 of the United Nations Charter". This clause aims to fill the gap left by the lack of an EU common defence by instituting mandatory military mutual assistance in response to territorial attacks.

The exercises highlighted avenues for potential amendments to the response mechanism foreseen in Council Decision 2021/698/CFSP, which have been outlined in the 2023 Space Strategy for Security and Defence. In particular, the mechanism should become "the cornerstone of the EU response to the space domain".[247] To this end, the High Representative envisages a potential reform to broaden its scope compared to the current wording of Article 1 of the Council Decision. As a result of this potential change, the CDSP response mechanism should cover any type of threat originating from the space domain and likely to impact the security of the Union. Accordingly, the Space Threat Response Architecture should expand its scope of application to all space security incidents at the EU level, thus building upon not only the Space Program Security Monitoring Service, but also the SDA services and support derived from SIAC. To strengthen the effectiveness of the mechanism and ensure close coordination between military and civilian components of the response to space threats, the Strategy envisages a military contribution from the EUMS.

The policy orientation towards strengthening the CSDP Space Threat Response Mechanism shaped by the 2023 Strategy is particularly insightful. On the one hand, the proposed amendments confirm the relevance of space as a strategic domain of the CSDP and reflect on the operational dimension of the broad conceptual understanding of space threats as defined by the 2023 Strategy itself.[248] Indeed, the multiple dimensions of these phenomena require effective coordination between all organisations involved – be they EU or national, CSDP or non-CSDP. On the other hand, the very fact that a CSDP procedural framework is considered the best mechanism to design and deploy a response to protect assets that, in principle, do not operate within such a policy, is indicative of the underlying trends in the development of the EU Space Policy. This choice is perhaps inevitable from a legal point of view, if one aims to avoid duplication between CSDP and non-CSDP security architectures. Indeed, the specificity of the CSDP – which is governed by "specific rules and procedures" of an intergovernmental nature – and the dividing line between it and other Union policies defined by Article 40 TEU would prevent the deployment of military components in a crisis response mechanism established outside of Title V of the TEU. However, this development confirms the emerging trend towards enhancing the contribution to security and defence of space assets. The next section will further elaborate on this phenomenon.

[247] European Commission, Directorate-General for Defence Industry and Space, Joint Communication to the European Parliament and the Council, European Union Space Strategy for Security and Defence, JOIN(2023) 9, p. 8.

[248] See *supra*, section 3.6.1.

4. The EU Space Policy's Contribution to Security and Defence

As outlined in section 2 above, the EU Space Policy has traditionally been developed as an inherently civilian domain, based on assets serving purposes that only incidentally touched on security and defence purposes. Against this background, the current practice of institutions of the Union is indicative of a paradigm shift. The recognition of space as a strategic CSDP domain by the 2022 Strategic Compass[249] has triggered an evolutionary process towards enhancing the potential contribution of the EU Space Policy to the security and defence domain. As highlighted in the 2023 Strategy, "[t]he functioning of economies, citizens and public policies increasingly relies on space-related services and data, including those in the field of security and defence".[250] In this scenario, not only does the security of space assets rely heavily on the CSDP, but the strengthening of the EU Space Policy itself provides a key contribution to the Union's security and defence. As a result, CSDP actors and instruments appear to play an increasingly important role in the space domain, and the interaction between the two policies is closer than ever. This section analyses this development by presenting its key manifestations in practice.

4.1. The Emergence of Security and Defence Aspects in EU Space Programmes

Two of the main implications of the growing interconnection between space on the one hand, and security and defence on the other, are the explicit introduction of security and defence objectives in the functioning of existing EU Space Programmes, and the establishment of new programmes with specific security purposes. These trends result in a shift from a predominantly civilian to an increasingly military use of space assets, as is evident especially in the development of a new version of the Copernicus programme and in the design of Iris².[251]

In the following paragraphs, the emergence of security and defence aspects in the different EU Space Programmes will be analysed in detail.

4.1.1. Global Satellite Navigation and Positioning System

Positioning, Navigation, and Timing (PNT) satellite systems were originally created as a tool for military forces. In fact, the first satellite navigation system ever created was the US TRANSIT in 1964, which provided information to the US submarine ballistic missile force. Since then, PNT systems have been widely used in both military and civilian sectors, considering their importance to activities on Earth.[252] GNSS services are crucial for defence, security, and EU interests. An accurate, precise and robust PNT satellite service can provide armed forces with the necessary freedom of movement to conduct successful military operations. This PNT capability can be used both at strategic and tactical levels, for the "engagement of high accuracy weapons' guidance".[253]

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[249] See *supra*, section 3.2.

[250] European Commission, Directorate-General for Defence Industry and Space, Joint Communication to the European Parliament and the Council, European Union Space Strategy for Security and Defence, JOIN(2023) 9, p. 1.

[251] R. González Muñoz, C. Portela, *The EU Space Strategy for Security and Defence: Towards Strategic Autonomy?*, cit., p. 6.

[252] For further information over the historical development of PNT systems see: M. Detratti, F. Dolce, *PNT for Defence*, in K.-U. Schrogl (ed.), *Handbook of Space Security. Policies, Applications and Programs*, Springer, 2020, pp. 821-844.

[253] *Id*.

The reliance of armed forces on GNSS instruments creates even more significant vulnerabilities for national military forces. Hence, it is necessary to establish PNT superiority over adversaries, commonly referred to as NAVWAR (Navigation Warfare). NAVWAR is defined as "the deliberate defensive and offensive action to assure and prevent positioning, navigation and timing information through coordinated employment of space, cyberspace, and electronic warfare".[254]

At the European level, the PNT service is provided by Galileo and EGNOS programmes. Although this service was conceived as a civilian programme,[255] security concerns have also been addressed. Galileo and EGNOS also manage some security objectives, such as "the control of the systems at all times and situations, the prevention of security issues specific to GNSS infrastructure and the protection of the system from malicious or hostile attack".[256] With Galileo, the Union has introduced a service specifically conceived for military operations, as the US Government had previously done with the GPS system. Therefore, in 2010, the Commission announced its intention to develop a Public Regulated Service (PRS) "critical for military systems and also important for private sector actors willing to pay for increased accuracy compared to freely available PNT services",[257] which was included in Galileo services, as stated in Regulation 2021/696.[258] The PRS has been defined as an "encrypted navigation service for governmental authorised users and sensitive applications that require high continuity".[259] This service should be more resistant to spoofing and jamming, which should provide EU Member States with autonomous freedom of movement of their armed forces involved in military operations. The service is intended to be limited to authorised governmental users, as well as third countries and international organisations.[260]

The Galileo PRS has been designed to be compatible with the US GPS and to continue working in case of a loss of GPS signal. However, the Galileo PRS is still not used by the armed forces of EU Member States.[261] Indeed, its Initial Operational Capability is expected in 2025.[262] Nevertheless, in 2021, a consortium of 30 European organisations launched a project for implementing Galileo PRS, namely the GEODE (Galileo for EU Defence). The aim is to establish a broad Galileo application project, developing equipment designed and tested with Galileo PRS for use by CSDP bodies and in all States that have a PRS agreement with the EU.[263]

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[254] M. Detratti, F. Dolce, *PNT for Defence*, cit., p. 825.

[255] D. Fiott, *The European Space Sector as an Enabler of EU Strategic Autonomy*, In-depth Analysis, *Policy Department for External Relations*, 2020, p. 19, available at: https://www.europarl.europa.eu/thinktank/en/document/EXPO_IDA(2020)653620.

[256] ESA, *Status Report on ESA's Security-Related Developments and Activities*, Vol. 62, 2017, p. 1.

[257] E. Topcuoglu, S. Bora, *Lessons for EU Space Programmes for Collective Defence*, cit., p. 427.

[258] Art. 45(1)(d), Regulation (EU) 2021/696.

[259] Galileo Public Regulated Service, EUSPA website, available at: https://www.gsc-europa.eu/galileo/services/public-regulated-service.

[260] Decision No 1104/2011/EU of the European Parliament and of the Council of 25 October 2011 on the rules for access to the public regulated service provided by the global navigation satellite system established under the Galileo programme.

[261] E. Topcuoglu, S. Bora, *Lessons for EU Space Programmes for Collective Defence*, cit., p. 427.

[262] Galileo*, the European Union Global Navigation Satellite System*, factsheet, available at: https://defence-industry-space.ec.europa.eu/document/download/04ae75b0-e6b6-4a12-9e14-ecd9cd6c1a7a_en?filename=Galileo%20the%20EU%20GNSS%20Factsheet.pdf.

[263] Galileo EU Defence (GEODE), *The Biggest Galileo Application Ever Launched* (30 June 2021), https://insidegnss.com/galileo-eu-defence-geode-the-biggest-galileo-application-ever-

4.1.2. Space-Based Earth Observation

Earth observation is described as "the process of gathering information about the Earth's surface, waters and atmosphere via ground-based, airborne and/or satellite remote sensing platforms".[264] Monitoring of the Earth's environment from space offers the EU important benefits not only from an environmental perspective, but also in relation to security and defence: it provides the ability to predict changes in the environment, improve crisis management, increase situational awareness, and help gather intelligence and monitor possible threats. This is particularly useful in border surveillance and counter-terrorism.[265]

The programme dedicated to Earth observation is Copernicus, which operates through six different services, including one dedicated to security. The latter provides information in response to the Union's security challenges, improving crisis prevention in several areas: border surveillance, maritime surveillance, support for the EU's external relations, and research and development for the security of Earth observation.[266] The stated aim of border surveillance is to reduce migrant deaths, increase the internal security of the Union, and fight cross-border crime. In the area of maritime surveillance, the security service aims to improve navigation safety, support fisheries control, combat marine pollution and contribute to law enforcement at sea.[267]

The security service component consists of a geospatial information service that assists both the EU and its Member States. SatCen already relies heavily on the Union's space assets, with a focus on Copernicus, together with assets of Member States and commercial organisations to inform CSDP decision-makers at the political-strategic level.[268] In 2023, the Commission gave SatCen new areas of application, many of which are key for security and defence.[269]

4.1.3. Secure Satellite Communications

The development of secure communications based on satellite networks is important for wider societal needs and for security and defence objectives. In the broader realm of secure satellite communications, there are two programmes that have considerable relevance in the field of security and defence: GOVSATCOM and Iris².[270]

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launched/#:~:text=Galileo%20PRS%20signals%20are%20designed,continue%20operating%20in%20adverse%20conditions.

[264] EUSPA website, *Earth observation*, available at: https://www.euspa.europa.eu/eu-space-programme/copernicus/what-earth-observation.

[265] R. González Muñoz, C. Portela, *The EU Space Strategy for Security and Defence: Towards Strategic Autonomy?*, cit., p. 6.

[266] Programme of the European Union, *Copernicus*, available at: https://www.copernicus.eu/en/copernicus-services/security.

[267] *Id*.

[268] See *supra*, section 3.5.

[269] Such as: Security of EU Citizens, Humanitarian Aid, Crisis and Conflict, Rule of Law, Transport Safety and Security, Stability and Resilience for Development, Cultural Heritage, International Trade and Economic Diplomacy, as well as cutting-edge challenges such as Environmental Compliance, Climate Security or Health Security. See: Defence Industry and Space, Signature of the contribution agreement for the implementation of the Copernicus Security Service component on Support to EU External and Security Actions (SESA), European Commission website, available at: https://defence-industry-space.ec.europa.eu/signature-contribution-agreement-implementation-copernicus-security-service-component-support-eu-2023-08-30_en.

[270] See *supra*, section 2.4.4.

On the one hand, GOVSATCOM provides government satellite communication capabilities for both EU and Member States' authorities managing the security of missions or critical infrastructures.[271] It ensures support in three cases: crisis management (including civilian and military missions and operations, natural and man-made disasters, and maritime emergencies); surveillance (border surveillance, pre-border surveillance, sea-border and maritime surveillance and illegal trafficking surveillance); and key apparatus (police communications, data network and services, diplomatic networks, etc.).[272] However, GOVSATCOM is also relevant for the security of space infrastructures, such as Galileo and EGNOS.[273] Given its strategic importance, Regulation 2021/696 emphasises the need to achieve an "appropriate level" of non-dependence on other actors in the development and use of the programme, building on existing capabilities.[274] In the first operational phase of GOVSATCOM, extending to 2025, the programme will rely on the capabilities of different Member States and commercial communication and service providers. However, if these resources are inadequate to meet demand, additional capacities and infrastructures will be made available, possibly through one or more public-private partnerships.[275]

On the other hand, Iris² is conceived as a multi-orbital satellite constellation combining Low Earth (LEO), Geostationary (GEO) and Medium Earth Orbit (MEO) satellites.[276] This programme merges private, public and defence interests, and is composed of an extensive satellite connectivity network available to all actors.[277] The establishment of Iris² started from the need to "provide for a Union satellite-based, multi-orbital communication infrastructure for governmental use"[278] meeting the growing demand for secure satellite communications, impossible for GOVSATCOM. This programme will indeed ensure improved communication capabilities and resilient global connectivity in response to geopolitical and cyber threats, enabling users to have connectivity even in dead zones.[279] More specifically, Iris² should provide highly versatile internet communications that are difficult to trace and disrupt.[280] These features would make Iris² useful for a wide spectrum of government applications, for instance, in border surveillance, crisis management (for example, the provision of humanitarian aid) and in the protection and connection of key infrastructures.[281]

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[271] C. Cellerino, *EU Space Policy and Strategic Autonomy: Tackling Legal Complexities in the Enhancement of the 'Security and Defence Dimension of the Union in Space'*, cit., p. 499.
[272] Rec. 100, Regulation (EU) 2021/696.
[273] EUSPA website, *GOVSATCOM*, available at: https://www.euspa.europa.eu/eu-space-programme/secure-satcom/govsatcom.
[274] Rec. 101, Regulation (EU) 2021/696.
[275] Rec. 104, Regulation (EU) 2021/696.
[276] European Commission Website, *IRIS²: the new secure satellite constellation*, available at: https://defence-industry-space.ec.europa.eu/eu-space/iris2-secure-connectivity_en; Latvian Technology in Space, *Welcome IRIS²: EU's new communication satellite infrastructure*, available at: https://latviaspace.gov.lv/en/news-events/welcome-iris-eus-new-communication-satellite-infrastructure/.
[277] M. Sintorn, I. Verduci, *IRIS²: the Dawn of EU Leadership in Space*, *The European Army Interoperability Centre*, 2023, p.3.
[278] Rec. 10, Regulation 2023/588.
[279] EUSPA website, I*RIS²*, https://www.euspa.europa.eu/eu-space-programme/secure-satcom/iris2.
[280] M. Sintorn, I. Verduci, *IRIS²: the Dawn of EU Leadership in Space*, cit. p.3.
[281] European Commission, *IRIS²: the new secure satellite constellation*, available at: https://defence-industry-space.ec.europa.eu/eu-space/iris2-secure-connectivity_en.

4.1.4. A New Perspective on Space Situational Awareness and Its Components

Like the other components of the EU Space Programme, the SSA capability was created to ensure the safety and security of civilian services in and from space. As mentioned, SSA, with its SST, SWE and NEO services, was primarily tasked with monitoring space infrastructures for risks deriving from space collisions and re-orbital manoeuvres. Nevertheless, already in 2011, the EU/ESA Space Council stressed that space capabilities can "contribute significantly to the objectives of the common security and defence policy".[282]

In this context, the EU SSA programme can be exploited for both civilian and military use. For example, additional SSA components can be established to the existing ones "on the basis of military requirements"[283] compiled by Member States. Within the SSA, the SST organisational framework already includes military aspects and actors: States maintain control over the SST sensors, protecting information regarding some of their national space assets. Furthermore, military and defence stakeholders and users are already involved in the EU SST framework, both at the decision-making and operational levels.[284]

Finally, the SSA programme has among its objectives to "exploit synergies between civil and defence taking into account the security interests of the respective partners and their allies".[285] Indeed, even if SSA has always been considered from a civilian perspective, its services can also work for military purposes. First, SSA can contribute to safeguarding space assets from intentional and hostile man-made threats, "encompassing all means and measures to monitor, detect, predict and inform".[286] In the event of hostile threats or acts, a high-quality SSA capability is essential to carry out a military response and provide targeting information. Second, SSA can also be useful when a hostile space activity needs to be attributed to a third State or actor, as "adversaries are more likely to carry out attacks if their actions cannot be attributed, and less likely to attack if attribution is likely".[287] Thus, the EU SSA can play an important role in improving deterrence in space.

4.1.5. Space Domain Awareness: The New Defence Dimension

As the creation of an EU SSA service demonstrates, the idea that the EU has developed some capability to monitor space is not recent. However, starting with the 2023 Space Strategy for Security and Defence, the Union has introduced a new component into its Space Policy, namely Space Domain Awareness (SDA). Whilst acknowledging the relevance of situational awareness for

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[282] V. Reillon, *European Space Policy. Historical Perspective, Specific Aspects and Key Challenges*, cit.

[283] M. Polkowska, *Safety and Security Law: Space Situational Awareness System (SSA) in Transatlantic Relations. Europe Vis a Vis the US*, *Teka Kom. Praw. – OL PAN*, Vol. XI No. 2, 2018, p. 342.

[284] P. Faucher, R. Peldszus, A. Gravier, *Operational Space Surveillance and Tracking in Europe*, *Journal of Space Safety Engineering*, Vol. 7, 2020, pp. 420-425.

[285] EU SST Partnership Agreement, entered into force on the 11 November 2022, https://www.eusst.eu/newsroom/new-eu-sst-partnership-signed-2/.

[286] M. Polkowska, *Space Situational Awareness (SSA) for Providing Safety and Security in Outer Space: Implementation Challenges for Europe*, *Space Policy*, Vol. 51, 2020, p. 3.

[287] M. Borowitz, *From Space Situational Awareness to Space Domain Awareness: Examining Rhetorical and Substantive Transitions in the U.S. Approach to Space Security*, in T. Hoerber, I. Oikonomou (eds), *The Militarization of European Space Policy*, Routledge, 2024, p. 152.

possible harmful activities in space,[288] the 2016 Space Strategy did not discuss SDA or even mention that concept. Similarly, the 2022 Strategic Compass did not refer to SDA, other than for a general call for investment.

However, in 2023, the Commission established the need for the EU and its Member States to develop an SDA in the light of increasing global competition and escalating threats.[289] Interestingly, in introducing the concept of SDA, EU institutional practice has started to shift the discourse from an exclusively civilian perspective to one where civilian and security and defence aspects are closely intertwined.[290] Indeed, the SDA views space not solely as a realm for scientific and technical exploration, but as a potential domain for future warfare.[291] While there is still no universal definition of the concept of SDA, the US Space Force has defined it as encompassing "the effective identification, characterization, and understanding of any factor associated with the space domain that could affect space operations and thereby impacting the security, safety, economy, or environment"[292] of an actor. A definition is also included in the 2023 Space Strategy for Security and Defence, which states that SDA "consists of detecting, identifying and characterising space objects of interest in near real time, describing and understanding their behaviours, and connecting this information to underlying doctrines and related space systems. SDA feeds in real time the recognised space pictures of space commands, relying on intelligence on space manoeuvres and intents".[293]

While some similarities can be found between the general definitions of SSA and SDA, the latter places a sharper focus on the military dimension of space. In particular, the Commission has highlighted that SDA is essential for "attributing space threats in orbit and triggering a potential EU response".[294] Interestingly, through the development of the SDA, EU Space Policy and CSDP objectives converge. Council Decision (CFSP) 2021/698[295] establishes "operational provisions enabling the EU to attribute and respond to threats to or through systems set up and services of the EU Space Programme, if such threats would affect the security of the EU and/or of its Member

[288] Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, Space Strategy for Europe, COM(2016) 705 final.
[289] Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council 'European Union Space Strategy for Security and Defence', JOIN (2023) 9, p. 1.
[290] See a similar analysis regarding the U.S. in M. Borowitz, *From Space Situational Awareness to Space Domain Awareness. Examining Rhetorical and Substantive Transitions in the U.S. Approach to Space Security*, in T. Hoerber, I. Oikonomou (eds), *The Militarization of European Space Policy*, Routledge, 2024, pp. 151-169.
[291] S. Erwin, *Air Force: SSA is no more; it's 'Space Domain Awareness'* (14 November 2019), available at: https://spacenews.com/air-force-ssa-is-no-more-its-space-domain-awareness/.
[292] J. W. Raymond, *Space Capstone Publication: Spacepower: Doctrine for Space Forces*, United States Space Force, 2020, p. 34.
[293] Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council 'European Union Space Strategy for Security and Defence', JOIN(2023) 9, p. 8.
[294] *Id.*
[295] Council Decision (CFSP) 2021/698 of 30 April 2021 on the security of systems and services deployed, operated and used under the Union Space Programme which may affect the security of the Union, and repealing Decision 2014/496/CFSP.

States".[296] The Space Threat Response Architecture is intended to be implemented in line with the Council Decision.[297] Moreover, SSA is considered "an operationally specific approach",[298] capable of tackling space threats separately, while SDA assumes a holistic approach, integrating capabilities coming from both non-military and military space assets as a whole. Therefore, SDA aims to complement existing SSA, SST, SWE and NEO activities with possible EU military needs. Synergies between these components are considered necessary to increase the ability to detect space threats and the "precision of advanced collision avoidance manoeuvres".[299] In the future, the EU could consider SDA not only for monitoring and tracking capabilities in case of hostile space activities, but also for the creation of a command and control structure, capable of a common European response to space threats. For the moment, the EU SST Consortium is the main centralised body, able to collect, process and use intelligence from Member States for SSA and SST.[300]

SDA is still a capability under development, but given the growing number of emerging threats, it undoubtedly plays a pivotal role in protecting critical space infrastructure. An autonomous SDA capability would enable "timely response and deterrence measures"[301] against such threats. It is indeed clear that the more the EU relies on its space assets for an array of sectors, the more its vulnerabilities are exposed.

4.2. Integrating Security and Defence within the Financial Framework of the EU Space Programme

The financing of EU actions and programmes relating to the space programme is ensured through the EU's Multi-annual Financial Framework (MFF),[302] which stipulates budgetary allocations over a seven-year period.

Pursuant to Article 312 TFEU, the MFF outlines the EU's long-term spending plans, defining the financial envelope for various programmes for a set period of time. As such, Article 18 of Council Regulation (EU, Euratom) 2020/2093, laying down the MFF for the years 2021-2027, sets the maximum amount of the contribution to the financing of the EU Space Programme. The currently applicable MFF, covering 2021-2027, has recently been revised by Council Regulation (EU) 2024/765 to address recent geopolitical challenges and, mainly, the Russian invasion of Ukraine.

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[296] Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council 'European Union Space Strategy for Security and Defence', JOIN (2023) 9, p. 8.
[297] See *supra*, section 3.5.
[298] D. Fiott, *In Orbit: The European Union, Defence and Space Domain Awareness*, CSDS Policy Brief, Vol. 2023 No. 22., 2023, pp. 1-4.
[299] Joint Communication from the Commission and the High Representative of the Union for Foreign Affairs and Security Policy to the European Parliament and the Council 'European Union Space Strategy for Security and Defence', JOIN(2023) 9, p. 12.
[300] See *supra*, section 2.4.5.
[301] U.-E. Botezatu, *Space Domain Awareness and Critical Space Infrastructures: Implications for Airspace Geopolitics*, *Review of the Air Force Academy The Scientific Informative Review*, Vol. XXI No.1 (47), 2023, pp. 61-67.
[302] Council Regulation (EU, Euratom) 1311/2013 establishing the Multiannual Financial Framework for 2014-2020 and Council Regulation (EU, Euratom) 2093/2020 laying down the Multiannual Financial Framework for 2021-2027.

Within the MFF, a specific spending category, albeit under the heading "Single Market, Innovation and Digital", is dedicated to space, with a sub-category for the EU Space Programme.[303] For the latter, the MFF determines the overall funding available, while Regulation 2021/696 regulates the specific use of these funds to support the various activities and components of the EU Space Programme.[304]

Article 11(1) of the Regulation deals with the mechanism for budgetary contribution to the EU Space Programmes: Galileo,[305] EGNOS, Copernicus, SSA, and GOVSATCOM. For the 2021-2027 period, € 14.8 billion is allocated, making it the largest budget ever for EU space activities.[306] According to Article 11(3) therein, additional measures to ensure efficient and autonomous access to space and to foster an innovative and competitive European space sector, namely the activities referred to in Articles 5 and 6 of the Regulation,[307] are financed under the components of the EU Space Programme. Article 11(4) clarifies that the Union budget for the Programme will cover all activities needed to achieve its objectives. Revenues generated by the components of the Programme will be used to finance the segment that created the revenue; Member States can provide additional financial contributions, provided they do not create financial, technical, or timing burdens. The Commission will decide whether these conditions are met and whether such contributions are treated as externally assigned revenue.[308]

Another specific category of MFF spending is dedicated to security and defence,[309] and its capacity has been steadily increasing, although it is still the smallest.[310] In particular, the 2024 review led, for

[303] The sub-category "Space" maintains a consistent percentage allocation of around 1,24% of the annual budget across the years 2021 to 2027 and of 1,25% of the total MFF; of this financial commitment, the vast majority is allocated to the EU Space Programme, and the rest to decentralised agencies.

[304] Therefore, Regulation 2021/696 lays down the prime reference amount constituted by a financial envelope for the entire duration of the Programme, pursuant to Art. 18 of the Interinstitutional Agreement of 16 December 2020 between the European Parliament, the Council of the European Union and the European Commission on budgetary discipline, on cooperation in budgetary matters and on sound financial management, as well as on new own resources, including a roadmap towards the introduction of new own resources.

[305] The Commission's ability to control the financial contributions to Galileo also represents its main source of leverage over the programme. See: E. Topcuoglu, S. Bora, *Lessons from EU Space Programmes for Collective Defence*, cit., p. 428.

[306] The budget allocated is broken down in three categories of expenditure, with 60,6% of the financial envelope for Galileo and EGNOS, 36,4% for Copernicus, and 2,7% for SSA and GOVSATCOM. According to Art. 11(2) of the Regulation, the Commission may reallocate funds between the categories of expenditure.

[307] Art. 5, Regulation (EU) 2021/696 refers to launching services, including space ground infrastructure and technology, and Art. 6 refers to capacity building activities.

[308] Art. 12, Regulation (EU) 2021/696 deals with assigned revenue.

[309] S. Mazur, *Security and defence. Heading 5 of the 2021-2027 MFF*, European Parliamentary Research Service, 2021, pp. 1-9.

[310] The category was absent from the previous MFF (2014-2020), but its introduction in the current MFF marks a significant shift in EU priorities. The evolution of spending in heading "Security and Defence" shows a gradual but steady increase in commitments, rising from € 1,805 million in 2021 (representing 1,1% of the annual budget for that year) to € 2,705 million in 2027 (representing 1,5% of the annual budget for that year). Over the entire period from 2021 to 2027, this category accounts for a total of € 14,922 million, which amounts to 1,23% of the total MFF 2021-2027. A sub-category is dedicated specifically to the EDF, which has also seen an upward trajectory in its commitments. In 2021, the EDF received € 946 million (0,58% of the annual budget for 2021), and, by 2027, its allocations will rise to € 1,883 million (1,06% of the annual budget for 2027). In total, the EDF is allocated € 7,953 million across the 2021-2027 period, making up 0,66% of the total MFF. Additionally, spending for the CFSP, although categorised under the heading "Neighbourhood and the World", also reflects this trend of increased financial commitment. CFSP funding rose from € 352 million in 2021 (0,21% of the annual budget

the first time, to an increase in spending ceilings, with part of the increase affecting the security and defence budget.

The specific defence cluster under the security and defence section of the MFF includes the EDF,[311] an important instrument for the funding of collaborative research and development in military capabilities. The EDF can, therefore, provide a funding mechanism to support space-related activities with military implications. Regulation 2021/697 outlines the criteria and procedures for allocating funds to collaborative defence research and development projects, ensuring alignment with EU strategic priorities and state aid rules.[312] It has been argued that the EDF represents a shift towards supranational funding of defence capabilities, including those that overlap with space policy.[313] However, it still operates with constraints that ensure that Member States retain control over the military aspects of these initiatives.

The EDF has financed projects relating to the space domain since the beginning. In the first two years of its operation, it allocated 200 million for space-related initiatives.[314] In 2024, two calls for proposals were issued under the EDF for three specific topics in the space sector: advancing technologies for satellite communications and multi-source satellite imagery analysis, performance assessment of multi-source satellite imagery analysis systems, and development of a secure waveform for satellite communications to improve European interoperability in military satellite communications.[315]

CSDP operational expenditure with defence and military implications is subject to a special regime. According to Article 41(1) TEU, CSDP administrative expenditure is to be borne by the EU budget. Article 41(2) TEU deals with operational expenditure, which is, in principle, also borne by the EU budget. However, two exceptions are made, the first of which is particularly relevant for space-related activities. Article 42(2) TEU prohibits financing from the EU budget for "operations having military or defence implications".[316] As this provision is not considered a substantive prohibition, joint financing of the Union's defence activities outside of the EU budget is neither excluded nor prohibited.[317]

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for 2021) to € 415 million in 2027 (0,22% of the annual budget for 2027), amounting to a total of € 2,679 million across the 2021-2027 period, or 0,22% of the overall MFF.

[311] Regulation 2021/697 establishing the European Defence Fund. In fact, the EDF represents more than 50% of the total commitments under the security and defence heading of the 2021-2027 MFF. For more on this, see: S. Mazur, *Security and defence. Heading 5 of the 2021-2027 MFF*, European Parliamentary Research Service, 2021, pp. 1-9.

[312] European Commission, *Launching the European Defence Fund*, COM(2017) 295; S. Biscop, *European Defence: The Full Package*, in Egmont Institute Commentaries, 2022, available at: https://www.egmontinstitute.be/european-defence-the-full-package/.

[313] E. Topcuoglu, S. Bora, *Lessons from EU Space Programmes for Collective Defence*, cit., pp. 419-420.

[314] O. Credi, M. V. Massarin, *Italy in Space: Collaborations and Future Prospects*, Documenti IAI 23/21, November 2023, p. 9.

[315] Commission implementing decision of 15 March 2024 on the financing of the European Defence Fund established by Regulation 2021/697 of the European Parliament and the Council and the adoption of the work programme for 2024. See *supra*, section 3.1.5.

[316] S. Rodrigues, *Financing European Defence: The End of Budgetary Taboos*, *European Papers*, Vol. 8, No. 3, 2023, p. 1156.

[317] J. von Achenbach, *The EU Arms Supplies to Ukraine from the Perspective of Budgetary and Constitutional Law*, *Verfassungsblog*, 2022, available at: https://verfassungsblog.de/too-little-politics-in-eu-defense-policy/.

The special regime outlined in Article 41 TEU is also relevant for activities under the EU Space Programme in support of CSDP missions and operations, where such activities are of operational nature and have military or defence implications.[318] While the EU Space Programme can support activities for civilian purposes, it cannot directly finance military operations through the EU budget.[319] On the one hand, each individual space programme falls under the MFF, which provides the financial framework and allocates funds according to pre-defined, primarily civilian, objectives. On the other hand, space services in support of CSDP missions and operations are provided by SatCen, which draws on resources from the relevant EU Space Programmes. SatCen's use of these resources for defence purposes represents a specific operational application of space assets, distinct from the programmatic function and budgetary management of each space programme under the MFF. SatCen's expenditure for these activities is covered by a separate and dedicated budget financed by Member States' contributions to the Centre's budget, entirely outside the MFF.[320]

While Article 41(2) TEU prohibits the financing of military operations from the EU budget, the second exception set out in the Article provides that operating expenditure shall be borne by the EU budget when the Council unanimously decides otherwise. This provision adds some flexibility, potentially allowing certain space activities with defence components to receive funding if agreed unanimously by the Council.

Financial contributions are ensured through a combination of funding mechanisms, namely the EDF and Horizon Europe. The Commission is also encouraged to promote synergies between other Union programmes and financial instruments, enabling combined funding arrangements where possible.[321]

Finally, it should also be noted that, while primarily focused on civilian research, Horizon Europe[322] has also supported several projects with potential defence applications in the space domain, in particular through dual-use technologies.[323] One of its clusters is dedicated to digital, industry and space matters. Examples of applied practice include the projects: "Plan the European Roadmap and its Activities for Space Exploitation of Robotics and Autonomy" (PERASPERA-X),[324] "European

[318] T. Ramopoulos, *Article 41 TEU*, in M. Kellerbauer, M. Klamert, J. Tomkin (eds), *The EU Treaties and the Charter of Fundamental Rights: A Commentary*, 2019, Oxford University Press, p. 270.
[319] S. Rodrigues, *Financing European Defence: The End of Budgetary Taboos*, *European Papers*, Vol. 8 No. 3, 2023, pp. 1155-1177.
[320] See *supra*, section 3.4.
[321] Rec. 15, Regulation (EU) 2021/696.
[322] Regulation (EU) 2021/695 establishing Horizon Europe - the Framework Programme for Research and Innovation, laying down its rules for participation and dissemination.
[323] According to Recs. 18 and 21, Regulation (EU) 2021/696, the collaboration between Horizon Europe and the EU Space Programme aims to create synergies that bolster the competitiveness of Europe's space sector, in order to reinforce Europe's autonomy in access to space, while also enhancing its global role. Moreover, research breakthroughs in Horizon Europe benefit from the data and services provided by the EU Space Programme, supporting innovation across Europe's research community.
[324] ESA, *PERASPERA: Space Robotic Technologies*, available at: https://www.esa.int/Enabling_Support/Space_Engineering_Technology/PERASPERA_Space_Robotic_Technologies; CORDIS, *Plan the European Roadmap and its Activities for SPace Exploitation of Robotics and Autonomy - eXtended (PERASPERA-X)*, available at: https://cordis.europa.eu/project/id/874567.

Ways Forward for Space Traffic Management" (SPACEWAYS),[325] and the Pan-European Quantum Communication Infrastructure (EuroQCI).[326]

In conclusion, the dual-use approach of the 2023 EU Space Strategy for Security and Defence is reflected not only in the availability of various EU funding instruments, but also in the way these are combined to cover both civilian and military uses. This provides further evidence of the growing importance of security and defence objectives in EU space-related actions and the increasing hybridisation between civilian and military uses of space in EU practice.

4.3. EU Space Programmes' Security and Defence Activities in a Multi-level Context: The Contribution of Member States' Assets

As the third vertex of the triangular governance model,[327] several Member States have long-standing experience and infrastructure in the space sector, with national agencies and systems playing a crucial role. Given their existing resources and capabilities, they are well placed to contribute significantly to the implementation of the EU Space Programme, supporting national and European objectives. Actions under the EU Space Programme build on and benefit from national capabilities[328] and, in line with Article 27(1) of Regulation 2021/696, Member States may participate in the Programme by contributing technical expertise, know-how, and infrastructure. Two key issues related to the role of Member States' assets within the EU Space Programme are hereby addressed. The first is the ownership of assets developed or used under the Programme, including the extent to which Member States may retain ownership or shared rights over certain contributions. The second is the integration of national assets into EU operations, for example through exercises involving bodies like SatCen to support shared objectives in space security.

About the first issue, Article 9 of Regulation 2021/696 defines the ownership and use of tangible and intangible assets created or developed under the EU Space Programme and its components. The EU is the owner of all such assets, and the Commission is responsible for ensuring that relevant contracts, agreements, and other arrangements establish Union ownership.[329] The wording of Article 9 implicitly recognises that assets developed under the EU Space Programme may be developed in cooperation with or through contributions from Member States, and, as such, full or shared ownership of these assets will depend on the specific involvement of Member States. While affirming the civilian nature of the Union's space assets, this ownership framework also supports their dual-use potential, thus facilitating their use for CSDP objectives.

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[325] Spaceways, available at: https://spaceways-h2020.eu/; CORDIS, *European Ways Forward for Space Traffic Management (Spaceways)*, available at: https://cordis.europa.eu/project/id/101004208.

[326] The European Quantum Communication Infrastructure (EuroQCI) Initiative, available at: https://digital-strategy.ec.europa.eu/en/policies/european-quantum-communication-infrastructure-euroqci.

[327] See *supra*, section 2.3.3.

[328] Rec. 12, Regulation (EU) 2021/696.

[329] The Commission is tasked with ensuring the optimal use of Union-owned assets, thus maximising their value for the collective benefit of the Member States and the Union, according to Art. 9(5), Regulation (EU) 2021/696. Additionally, the Commission can also leverage the means at the Member States' disposal, benefiting from their assistance and, under mutually agreed terms, delegating non-regulatory tasks related to the Programme's implementation to them. The Commission may also entrust specific tasks to Member State organisations through contribution agreements, especially where designated by the Member States concerned, pursuant to Art. 27(2), Regulation (EU) 2021/696.

However, there are three specific exceptions to the Union's ownership rule.[330] First, if assets are created or developed through grants or prizes fully financed by the Union, ownership may remain with the Member States. This rule appears to be intended to incentivise Member States and other entities to participate in space programme development activities. Given the Regulation's objectives, this first exception implies that participants in EU-funded calls know that they will retain ownership of the resulting outputs, including patents and know-how, which in turn facilitates the transfer of technology to the market. Second, if the EU does not fully finance the activities, ownership arrangements may vary according to the specific financial structure, allowing Member States or private entities within them to retain ownership. Third, special rules apply in cases involving the development, manufacturing or use of Public Regulated Service (PRS) receivers, in particular regarding the incorporation of EU Classified Information (EUCI).[331] In such cases, the Commission must ensure that the EU can use these receivers as required, even if the Member States retain ownership.

Furthermore, the question of "prospected ownership" is essential to outline how future ownership rights over developed assets will be managed. Given the complexity of national technical and financial contributions, some Member States may retain ownership or usage rights over specific assets, which is particularly relevant for projects where Union funding is partial. A specific example of prospected ownership is Iris², which foresees that Member States contribute assets and expertise while establishing EU ownership over core infrastructure. However, ownership rights may be shared, or specific usage rights may be granted to contributing States. This approach would safeguard both the Union's primary ownership of critical infrastructure for collective security and the ability of Member States to retain some control over contributed assets, reinforcing a cooperative structure within the EU Space Programme.[332]

The Commission is responsible for negotiating appropriate ownership regimes where the default ownership rule does not apply, particularly for assets covered by these exceptions.[333] It also manages ownership rights with third parties where pre-existing assets or rights are involved. This ensures that the EU can acquire the necessary licences or ownership rights and suggests that Member States contributing to pre-existing assets, such as national space technologies or infrastructure, can retain ownership while making these assets available for use under the EU Space Programme.[334] This flexible ownership model reflects the dual objectives of safeguarding EU ownership of strategic assets while integrating national resources into broader EU security frameworks, a dynamic essential to bridge the gap between EU Space Policy and CSDP objectives.

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[330] Art. 9(2), Regulation (EU) 2021/696.

[331] EUCI is to be handled according to the provisions of Council Decision 2013/488/EU and Commission Decision (EU, Euratom) 2015/444 on the security rules for protecting EU classified information.

[332] European Commission, *IRIS2 Industry Information Day Presentation*, 30 March 2023, available at: https://defence-industry-space.ec.europa.eu/document/download/0cacf600-5b8b-4c8b-bee0-61f4227ecbd3_en?filename=IRIS2%20Industry%20Information%20Day%20-%2030%20March%202023.pdf.

[333] Art. 9(3), Regulation (EU) 2021/696. For instance, with regard to PRS receivers, the Commission must ensure that the Union retains the right to use these assets.

[334] Pursuant to Art. 27(3), Regulation (EU) 2021/696, Member States are also responsible for ensuring the smooth functioning of the Programme, including taking necessary measures to protect frequencies essential for the Programme.

On the second issue, the integration of national assets into EU operations is essential to support shared objectives in space security. When national command structures or assets rely on information from EU space programs, such as Galileo or Copernicus, governance and sharing protocols are implemented to ensure security, proper attribution, and operational integration. In this respect, the principle of sincere cooperation requires Member States to align their national activities with the EU's broader strategic objectives.[335] For instance, during the STRA-X-24 exercise, the Single Intelligence Analysis Capability (SIAC), supported by geospatial intelligence products provided by the SatCen, played a role in coordinating information sharing on space threats between national and EU bodies.[336]

In contrast, when the EU relies on assets and information originating from national satellites, a similar structure of governance and sharing applies. National satellites provide critical space domain awareness information, which is essential for the EU to develop timely and accurate responses to space threats; indeed, the principle of sincere cooperation ensures, in this case, that Member States share critical data willingly and in a timely manner. As highlighted previously,[337] Member States contributed space domain awareness-related information to the STRA-X-24 exercise, which helped the EU detect and respond to space threats.[338] This mutual use of national and EU space assets underlines the intertwined nature of EU Space Policy and CSDP, with both policies benefiting from shared intelligence and operational integration.

In such cases, SatCen or the Galileo Security Monitoring Centre (GSMC) rely on national assets for specific data while ensuring that data is integrated into broader EU security frameworks. Conversely, the relevant EU bodies ensure that such information is used to maximise its strategic and security value for both the Union and its Member States. In this context, the principle of sincere cooperation should entail information sharing and a commitment to follow the common guidelines approved by the Council in the event of activation of response procedures.[339]

The growing convergence of civilian and military uses of space within the EU underlines the importance of synergies between these two domains. Member States, with their existing space infrastructures and national systems, play a key role in supporting both the civilian and defence components of the EU Space Programme. The use of these national assets, particularly in critical areas such as satellite communication and SSA, further blurs the line between civilian and defence objectives and confirms the converging paths of EU Space Policy and the CSDP.

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[335] Art. 4(3), TEU.

[336] EEAS, *Space: the EU Carries out Space Threat Response Architecture 2024 Exercise (STRA-X-24)*, 18 October 2023, available at: https://www.eeas.europa.eu/eeas/space-eu-carries-out-space-threat-response-architecture-2024-exercise-stra-x-24_en.

[337] See *supra*, section 3.5.2.

[338] EEAS, *Space: the EU Carries out Space Threat Response Architecture 2024 Exercise (STRA-X-24)*, 18 October 2023, available at: https://www.eeas.europa.eu/eeas/space-eu-carries-out-space-threat-response-architecture-2024-exercise-stra-x-24_en.

[339] Art. 27, Regulation 2021/696 allows Member States to contribute technical expertise, infrastructure, and know-how to the EU Space Programme, fostering collaboration and aligning national resources with EU goals. To enhance security, Article 34(6) mandates that Member States inform the Commission and Council of threats to Union space infrastructure, ensuring proactive information-sharing. Meanwhile, Article 42 requires Member States to protect national and EU space assets and adhere to Council-approved response procedures, reinforcing coordinated action in line with sincere cooperation.

4.4. The Private Actors' Contribution to the Defence Dimension of the EU Space Programmes

As the EU's ambitions in space have grown, private actors have become indispensable, extending their involvement beyond operational support to critical areas with security and defence implications.[340] The rise of "New Space" has transformed public-private cooperation, introducing new business models, technologies, and services.[341] Private companies now play a significant role in space activities such as satellite constellations, Earth observation, and space surveillance, all of which contribute directly to the EU's security and defence objectives.[342] This collaboration increases the resilience of key EU space infrastructures and improves the Union's ability to address threats in both space and terrestrial environments.[343]

By recognising space as an increasingly strategic domain, the practice of EU institutions has started to integrate private sector expertise and resources in the EU Space Programme. Regulation 2021/696 has established a legal framework that also governs private sector involvement, focusing on security standards and the procurement process.[344] The public-private partnerships arising from the EU Space Programme outlined by the Regulation are also key to strengthening the EU's defence capabilities by facilitating the development of technologies and services needed for secure communications, intelligence, and surveillance.[345]

Public-private partnerships (PPPs) are an essential tool for driving innovation and sharing risks in security-sensitive areas of the space domain. These partnerships balance public interest with private profit through contractual agreements that define roles, responsibilities, and risk-sharing arrangements. PPPs are often structured to align with the EU's broader strategic goals, allowing both public and private stakeholders to contribute their expertise in a mutually beneficial way. For example, private companies can provide cutting-edge technologies, while public institutions set strategic direction and regulatory standards.

Companies such as Arianespace, which is responsible for launching European satellites, are crucial to maintaining the EU's independent access to space.[346] Similarly, private firms involved in satellite

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[340] D. Fiott, *The European Space Sector as an Enabler of EU Strategic Autonomy*, cit., p. 12.

[341] M. Bataille, *Integrating Commercial Space for Military Applications in Europe: A Challenge and Opportunity*, *ESPI Brief 68*, September 2024, available at: https://www.espi.or.at/briefs/integrating-commercial-space-for-military-applications-in-europe-a-challenge-and-opportunity/.

[342] A. Kolovos, *Space Applications for Security and Defence*, *International Air Force Semester,* 2022, p. 92.

[343] P. Stubbe, *The Involvement of Private Actors in Planetary Defence Missions*, in I. Marboe (ed.), *Legal Aspects of Planetary Defence*, Brill/Nijhoff, 2021, pp. 354-370.

[344] K. Brocard, *The EU Regulation for the Space Programme*, in L. J. Smith, I. Baumann, S-G. Wintermuth (eds), *Routledge Handbook of Commercial Space Law*, Routledge, 2023, pp. 81-99.

[345] Rec. 32, Regulation (EU) 2021/696.

[346] Very recently, Arianespace successfully launched the Copernicus Sentinel-2C satellite from the Guiana Space Center, marking the final flight of the Vega launcher and supporting Earth observation for the EU's Copernicus programme; for more on this, see: Arianespace, *Arianespace successfully launches Europe's Copernicus Earth Observation Program Sentinel 2C Satellite*, (5 September 2024), available at: https://newsroom.arianespace.com/arianespace-successfully-launches-europes-copernicus-earth-observation-program-sentinel-2c-satellite. Arianespace is also a partner in the efforts of the Ariane 6 Launcher Task Force, which is designed to succeed Ariane 5, supporting Europe's space missions, including satellite constellations and deep space exploration; for more on this, see: Arianespace, *Ariane 6 Joint Update Report* (16 September 2024), available at: https://newsroom.arianespace.com/ariane-6-joint-update-report-16-september-2024?lang=eng.

manufacturing and operations are key players in the Galileo and Copernicus programmes, which serve dual-use applications, such as providing encrypted communications for military use.

A key example of the contribution of PPPs to EU defence and security is the GOVSATCOM programme, where private actors play a crucial role in designing, operating and maintaining the satellite infrastructure that supports secure communications. During the first phase of GOVSATCOM, existing satellite capacities will be utilised. The Commission should procure these capacities from Member States with existing national space infrastructure, as well as from commercial satellite communication providers while ensuring that the Union's security interests are protected. This first phase will gradually introduce GOVSATCOM services, but if it becomes clear that the initial capacity does not meet evolving demand, a second phase may be activated. In this phase, the development of bespoke satellite infrastructure, potentially through public-private partnerships, would be considered to expand capacity, possibly involving partnerships with Union satellite operations.[347] A notable example is the collaboration between SES, a global satellite operator, and the Government of Luxembourg, which jointly operate GovSat-1, a satellite dedicated to providing secure communications for government and defence applications.[348]

Similarly, Galileo's Public Regulated Service (PRS), designed to ensure that defence forces and emergency services maintain access to secure navigation data during crises, is provided by a PPP between Galileo itself and players such as Airbus,[349] Thales Alenia Space,[350] and OHB System.[351] Similar partnerships also exist under the Copernicus programme[352] and are envisaged in Iris^2, which includes a 12-year grant to attract private sector investments alongside EU funding.[353]

In addition to operational support, PPPs contribute to the development of dual-use technologies by optimising resource allocation. However, the growing reliance on private actors raises concerns about cyber-security, supply chain vulnerabilities, and technological sovereignty, all of which require robust regulatory oversight.

The evolving relationship between private actors and the EU Space Programme is set to deepen further, particularly in light of the future enactment of an EU Space Law Regulation. Private actors

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[347] Rec. 104, Regulation (EU) 2021/696.

[348] GOVSATCOM, *GovSat-1 Capacity*, available at: https://govsat.lu/govsat-1-capacity/.

[349] Airbus, *Europe's Galileo satellites show the way*, 4 June 2024, available at: https://www.airbus.com/en/newsroom/stories/2024-06-europes-galileo-satellites-show-the-way.

[350] Thales Group, *Thales confirms its key role to provide cybersecurity for Galileo second generation to meet tomorrow's threats*, 20 July 2023, available at: https://www.thalesgroup.com/en/worldwide/security/press_release/thales-confirms-its-key-role-provide-cybersecurity-galileo-second; Thales Group, *Thales Alenia Space, a pivotal player in the Galileo Program*, 23 January 2019, available at https://www.thalesgroup.com/en/worldwide/space/news/thales-alenia-space-pivotal-player-galileo-program.

[351] OHB System, *Four additional OHB satellites will reinforce Galileo. Europe's satellite navigation system continues to improve in performance*, 31 January 2019, available at: https://www.ohb.de/en/news/2019/four-additional-ohb-satellites-will-reinforce-galileo.

[352] Airbus, *Climate Missions. An Eye on Climate*, available at: https://www.airbus.com/en/space/earth-observation/climate-missions; Thales Alenia Space, *Space to observe and protect*, available at: https://www.thalesaleniaspace.com/en/what-we-do/observe-protect.

[353] European Commission, *Iris2 - the European Commission awards the concession contract to SpaceRISE consortium*, 31 October 2024, available at: https://defence-industry-space.ec.europa.eu/iris2-european-commission-awards-concession-contract-spacerise-consortium-2024-10-31_en.

are likely to continue to play an essential role in developing dual-use technologies, ensuring that space infrastructure is secure and resilient against threats. As the next phase of the EU Space Policy unfolds, we can expect private sector contributions to extend further to protect and enhance both civilian and defence space operations.

4.5. Which Place for Security and Defence Objectives in the Potential New EU Space Law?

Based on the above analysis, it appears that security and defence considerations are gaining momentum in the development of the EU Space Policy, thus becoming one of its main drivers. In this context, the very fact that similar issues are emerging in the debate surrounding the Commission's prospective proposal for an "EU Space Law" is not surprising.

The content of the proposal is likely to be divided into three pillars: safety, resilience and sustainability of operations and systems. The safety pillar is expected to include measures pertaining to space traffic management to reduce the risk of collisions.[354] In particular, it would seek to improve the use of the labelling system and create an EU registry that mandates the reporting of manoeuvre changes.[355] The sustainability pillar focuses on the environmental impact of space activities. Such measures would extend beyond the issue of space debris "to encompass the environmental impact of satellite and rocket production, launch, and operation, which release greenhouse gases and hazardous materials into the Earth's environment".[356] It would encourage the development and application of environmental standards across the entire space value chain. Lastly, the more defence-oriented pillar deals with resilience-related measures, which aim to protect "ground and space-based infrastructure, in particular from hostile and harmful activities in cyberspace".[357] It also covers the physical protection of assets to guarantee the integrity and functionality of critical space infrastructure.[358] The resilience pillar was also discussed in relation to the Third Joint Declaration on EU-NATO Cooperation, in which the President of the European Council, the President of the EU Commission and the NATO Secretary General expressed their willingness to strengthen cooperation "to address in particular the growing geostrategic competition, resilience issues, protection of critical infrastructures, emerging and disruptive technologies, [and] space".[359]

Some criticism has been raised against the prospect of such a far-reaching legislative proposal. The reasons are mainly linked to the alleged lack of competence of the Union and the risk of creating

[354] The basis is the Joint Communication to the European Parliament and the Council, An EU Approach for Space Traffic Management, an EU contribution addressing a global challenge of 2022.
[355] ESPI, *ESPI's Provision of Feedback for the Public Consultation of EU Space Law*, 2023, available at: https://www.espi.or.at/news/espis-provision-of-feedback-for-public-consultation-of-eu-space-law/.
[356] B. Jacobs, *An Institutional Law Analysis of the European Commission's EU Space Law Proposal*, *Air and Space Law*, No. 2, 2024, p. 25.
[357] L. Cesari, *Developing an EU Space Law: The Process of Harmonising National Regulations, HAL Open Science*, 2024, p. 5.
[358] The Pillar is linked to the EU discussion on critical infrastructure, keeping into consideration the fact that Directive NISR[2] and Directive CER do not consider the particular nature of the Space environment.
[359] Joint Declaration on EU-NATO Cooperation by the President of the European Council, the President of the European Commission and the Secretary General of the North Atlantic Treaty Organization, 10 January 2023, available at: https://www.nato.int/cps/en/natohq/official_texts_210549.htm.

greater legal uncertainty.[360] Nevertheless, there are also several reasons in support of such a legislative initiative. Indeed, it would contribute to strengthening the EU's strategic autonomy in a critical sector such as space. Furthermore, it would provide a minimum level of regulation among EU Member States and, more importantly, it would provide the EU with a unified position in space. Such a common regulatory framework would reinforce the EU's ability to consolidate its position as the fourth player of global significance in space, alongside the US, Russia and China. Through a common and coherent stance, the EU would not only protect its space infrastructure and strategic data, but would also strengthen its position in a sector that is crucial for security and technological competitiveness.

5. Distinct Policies, Converging Objectives: Framing the Hybridisation of EU Space Policy and the CSDP

According to the current EU Treaty framework, EU Space Policy and the CSDP are distinct. Indeed, they pursue different objectives and are expressions of dissimilar methods of integration. On the one hand, the EU Space Policy is driven by inherently civilian objectives and is developed and implemented through the supranational integration method. On the other hand, the EU objectives in the field of security and defence are pursued within the intergovernmental framework of the CSDP. Decision-making powers in this area are primarily vested in the European Council and the Council, while initiatives can come only from Member States or the High Representative. As previously discussed, these characteristics stem from the willingness of Member States to retain most of their sovereign powers in foreign and security policy. As a result, the EU's integration into the CSDP has so far failed to abandon traditional intergovernmental schemes in favour of a more integrated supranational legal framework.[361]

Given the dividing line between the Union's Space Policy and the CSDP, the research presented in this paper has highlighted the difficulty of keeping the two policies strictly separate in the current legal and geopolitical scenario. Indeed, services of the EU Space Programme provide crucial assets and information to support strategic decision-making and operational activities in the CSDP. This is the case, in particular, of the Copernicus Service in Support to EU External and Security Actions. As previously explained, this component of the Copernicus programme is managed and exploited by SatCen, a CSDP body, under the terms of an *ad hoc* contribution agreement with the Commission.[362] Furthermore, SatCen is a key player in the implementation of the CSDP, providing vital intelligence and geospatial imagery at the political-strategic level. It follows that, although pertaining to distinct policies, there is a clear connection between space and defence in the EU legal order.

The current global and geopolitical scenario and the resulting policy choices of EU institutions have led to the strengthening of that link. This paper has shown that the EU Space Policy and the CSDP

[360] "National laws serve as implementation of Article VI of the 1967 Outer Space Treaty; [...] share some similarities but have variations among them too". For further consideration on States and operators' reactions to the draft EU Space Law see: D. Stefoudi, *EU Space Law – Three Reasons Against, Three Reasons in Favour*, *Ejiltalk* (29 April 2024), available at: https://www.ejiltalk.org/eu-space-law-three-reasons-against-three-reasons-in-favour/.

[361] See *supra*, section 3.1.

[362] See *supra*, section 3.4.

evolve along converging lines, which implies the broadening of their respective scopes and, ultimately, the hybridisation of their underlying goals. More specifically, each of these two policies is characterised by centripetal forces.

On the one hand, the objectives of the CSDP are increasingly oriented towards space, which has become a strategic domain for the EU's security and defence. This vision has been outlined in particular in the 2022 Strategic Compass and is confirmed by concrete initiatives such as the extension of CSDP capability development objectives to space assets and services.[363] Moreover, the security of the Union's space assets is ensured by a dedicated Threat Response Architecture based on CSDP procedures. In this respect, one aspect of the 2023 Strategy marks a further shift towards the deeper integration of space into the CSDP. The Strategy envisages a reform of the Response Architecture, aiming to expand its scope to any security threat emanating from the space domain. This policy initiative points to a broadening of the CSDP guided by a general concept of security. As argued in this paper, such a development is probably inevitable. In the context of space security threats, military and civilian elements are inextricably intertwined. Therefore, the need to address both in a single coordinated response architecture makes the use of CSDP tools and procedures the only viable option, as the allocation of EU competences would presumably prevent the development of military operational tools to respond to space threats outside the CSDP. However, this policy direction demonstrates the centripetal force drawing the CSDP towards the space domain and the activities undertaken pursuant to the Union's Space Policy.

On the other hand, another centripetal movement is driving the development of the EU Space Policy. Starting from the assumption that space assets are inherently dual-use, as highlighted in particular in the 2023 Strategy, the practice of the EU Space Programme increasingly incorporates security and defence considerations and aspects, which have been analysed in detail in the paper.[364] This has implications, for instance, for the relevant financial arrangements. Article 41(2) TEU shields the Union's budget from CSDP operational expenditure, while resources pooled from the former finance Space Programmes. However, the emergence of security and defence aspects in the operation of EU space assets ultimately blurs the distinction between the CSDP and 'civilian' funding. Indeed, the Union's budget covers the development and operation of space assets which, given their dual-use nature, provide a key contribution to operational activities in the CSDP domain. The development of GOVSATCOM and Iris², whose functions go well beyond inherently civilian purposes, is evidence of this. The integration of security and defence elements into EU Space Policy is even more evident from the introduction of the Space Domain Awareness (SDA) concept into EU Space Policy. SDA has been conceptualised through a military lens and is specifically adapted for the space context. From this perspective, the EU's willingness to develop an autonomous SDA capability is a clear example of the centripetal force of EU Space Policy, thus witnessing the hybridisation of the latter with security and defence objectives.

It follows that the evolutionary paths of the CSDP and the EU Space Policy are increasingly intertwined: each of these policies shows a convergence on the objectives of the other and, consequently, an expansion of their respective scopes of application. This development adds a further layer of complexity to the relationship between the CDSP and other EU policies. In other

[363] See *supra,* section 3.3.
[364] See *supra,* section 4.1.

policy areas, particularly in relation to industrial policy measures aimed at strengthening the European defence industrial and technological base, we can see an expansion in practice of non-CSDP legal bases at the expense of CSDP instruments.[365] Whenever possible, the EU legislature tends to base regulatory measures on non-CSDP policies, on the assumption that their contribution to CSDP objectives, such as the development of Member States' defence capabilities, is not predominant. As this paper has analysed, the relationship between EU Space Policy and the CSDP is different and more complex. While the implementation of EU Space Policy is increasingly contaminated by the pursuit of security and defence objectives, the CSDP is also expanding by incorporating the use of space into its operational architecture.

Given the extension of CSDP operational mechanisms to space assets and the increasing awareness of the strategic relevance of space policy, it remains to be determined whether the current interplay between ownership of space assets and the allocation of operational competences in the security and defence domain is structurally sound to ensure the Union's readiness. Although the EU owns most space assets developed under its Space Programmes, Member States retain operational competences and chains of command, even within the CSDP framework. Without any change in this regard, this circumstance is likely to lead the EU to further strengthen and refine its CSDP operational architecture in the future, with a view to strengthening the coordination of all assets and actors involved.

[365] A. Miglio, G. Perotto, L. Grossio, *I meccanismi di finanziamento del settore Difesa nell'Unione europea e il loro contributo al rafforzamento dell'autonomia strategica*, cit., pp. 37-38.

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