

DOCTORAL (PHD) DISSERTATION ABSTRACT

# THE EVOLUTION OF EU SPACE LAW: FROM FRAGMENTATION TO UNIFICATION

*Towards a Coherent Legal Framework for European Union Strategic  
Autonomy in Outer Space?*

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## I. Introduction

The current effort to unify the European Union (EU) space policy and law is a remarkable move in its history of strategies for governing outer space. It not only signals the internal evolution of the EU space industry but also geopolitical response to the rapid reconfiguration of the international geopolitical landscape. The war in Ukraine, the election of Donald Trump as U.S. president, and mounting domestic political instability within key EU Member States are symptoms of the general uncertainty pervading international relations today. In this light, the geopolitical significance of space has become all the more apparent, calling for a more robust and cohesive European policy and legal order for space.

In the last couple of years, there has been growing momentum for the establishment of a single EU space law, although it should be noted that no official legislative proposal has come out yet from the European Commission (at the time of writing this part of the thesis). Still, several policy communications and political signals offer proof that the EU is making preparations for such an initiative. For instance, the 2022 Communication on Space Traffic Management<sup>1</sup> (STM) of the European Commission referred to the need for a more harmonized internal market approach to the regulation of space, notably for safety, resilience, and environmental concerns.<sup>2</sup> This direction was also supported by the conclusions of the French Presidency of the Council of the EU, which stressed the regulatory coherence while ensuring respect for national competencies.<sup>3</sup> In October 2022, the European Parliament also voted for a resolution to create a shared EU legal framework for space. Afterwards, the EU Space Strategy for Security and Defense,<sup>4</sup> published in March 2023, reaffirmed the necessity to proceed in the direction of a European space law.<sup>5</sup> Most recently, in September 2024, the Commissioner for Defense and Space Commissioner, Mr. Andrius Kubilius, in his mission letter from Ursula von der Leyen letter included the necessity of the creation of such a law, proof that this is becoming an apparent institutional priority.<sup>6</sup>

At the national level, there have been some signs of support, most notably in France, where the National Assembly adopted a resolution in March 2024 calling for the creation of a European

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<sup>1</sup> European Commission and High Representative of the Union for Foreign Affairs and Security Policy, *Joint Communication to the European Parliament and the Council: An EU Approach for Space Traffic Management – An EU Contribution Addressing a Global Challenge* (JOIN/2022/4 final), Strasbourg, February 15, 2022, accessed June 9, 2025, <https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52022JC0004>.

<sup>2</sup> European Space Policy Institute, *ESPI Report 71: Towards a European Approach to Space Traffic Management (Executive Summary)* (Vienna: ESPI, January 2020), accessed June 9, 2024, <https://www.espi.or.at/wp-content/uploads/2022/06/ESPI-Report-71-Space-Traffic-Management-ExecSum.pdf>.

<sup>3</sup> Assemblée nationale, “Loi européenne sur l’espace,” Dossiers législatifs, accessed July 17, 2024, [https://www.assemblee-nationale.fr/dyn/16/dossiers/loi\\_europeenne\\_espace](https://www.assemblee-nationale.fr/dyn/16/dossiers/loi_europeenne_espace).

<sup>4</sup> Council of the European Union, *Council Conclusions on the EU Space Strategy for Security and Defence* (ST-14512-2023-INIT), November 13, 2023, accessed June 9, 2024, <https://data.consilium.europa.eu/doc/document/ST-14512-2023-INIT/en/pdf>.

<sup>5</sup> European Commission. *EU Space Strategy for Security and Defence*. Brussels, March 10, 2023. [https://defence-industry-space.ec.europa.eu/eu-space/eu-space-strategy-security-and-defence\\_en](https://defence-industry-space.ec.europa.eu/eu-space/eu-space-strategy-security-and-defence_en) (accessed June 3, 2024).

<sup>6</sup> Ursula von der Leyen, “Mission Letter to Andrius Kubilius, Commissioner-Designate for Defence and Space” (Brussels, 17 September 2024), European Commission, November 14, 2023. [https://commission.europa.eu/document/download/1f8ec030-d018-41a2-9759-c694d4d56d6c\\_en?filename=Mission+letter+&utm](https://commission.europa.eu/document/download/1f8ec030-d018-41a2-9759-c694d4d56d6c_en?filename=Mission+letter+&utm) (accessed June 3, 2024).

space law.<sup>7</sup> with a similar initiative expected in the Senate. However, this enthusiasm remains limited across the EU: while many Member States have welcomed the idea of greater coordination,<sup>8</sup> they remain cautious regarding the law’s scope and potential implications for national competencies and industrial autonomy.

The attempt to achieve European space law is further indicative of tensions surrounding the issue of EU competitiveness at the international level. Competitiveness, particularly in areas regarded as being truly strategic, such as space, has been elevated to top-tier issues by the present European Commission. It is worth noting that Mario Draghi, former president of the European Central Bank (ECB), was asked to prepare a report on the future of European competitiveness, released in September 2024.<sup>9</sup> The report contains a section specifically directed to space and identifies several major problems, such as a lack of public investment, fragmented governance between the EU and national levels, very poor investment in research and development, and civil-military coordination, along with space companies that have difficulty evolving. In light of these problems, the report comes up with several sets of policy recommendations.<sup>10</sup> It recommends creating a true Single Market for space by adopting a common legal framework for the entire EU. These proposals support the idea that a harmonized European space law could help overcome current structural barriers and strengthen the EU’s strategic and industrial position in the global space sector.<sup>11</sup> As a result, an objective legal framework would serve to reduce fragmentation across the Union, make Europe a more strategic autonomous entity, and help ensure industrial competitiveness and security.

## 1. Statement of the problem

Recent political discourse often gives the impression that the European Union has turned into a “*super state*” of a sort, a “United States of Europe,” which “relegated” its member states to semi-autonomous provinces within a large empire.<sup>12</sup> This perception arises from the active role of the European Commission as the leading institution in overseeing EU policies, the existence of a European Parliament that enacts legislation applicable across the Union, and the Court of Justice of the European Union, which enforces such legislation even against the preferences of individual member states.<sup>13</sup> However, this image of a fully unified European polity does not reflect the reality in all policy areas, particularly in the emerging field of space governance,

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<sup>7</sup> Assemblée nationale, *Proposition de résolution relative à l’adoption d’une loi européenne sur l’espace*, n° 1944, déposée le 5 décembre 2023; rapport n° 1991 déposé le 13 décembre 2023; adoptée le 5 mars 2024,

<sup>8</sup> European Parliamentary Research Service (EPRS), “EU Capabilities in Space: Scenarios for Space Security by 2050,” EPRS Briefing 772914 (European Parliament, April 2025), accessed July 17, 2025, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2025/772914/EPRS\\_BRI\(2025\)772914\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2025/772914/EPRS_BRI(2025)772914_EN.pdf).

<sup>9</sup> *The Future of European Competitiveness – In-Depth Analysis and Recommendations*, European Commission, September 9, 2024, [https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92\\_en?filename=The%20future%20of%20European%20competitiveness\\_%20In-depth%20analysis%20and%20recommendations\\_0.pdf](https://commission.europa.eu/document/download/ec1409c1-d4b4-4882-8bdd-3519f86bbb92_en?filename=The%20future%20of%20European%20competitiveness_%20In-depth%20analysis%20and%20recommendations_0.pdf).

<sup>10</sup> Balázs Bartóki-Gönczy and Katarzyna Malinowska, “Paradigm Shift in the European Union’s Space Policy: Institutional Restructuring and Its Possible Consequences for the CEE Region,” *Frontiers in Political Science* 7 (2025): 1536170, <https://doi.org/10.3389/fpos.2025.1536170>.

<sup>11</sup> *The Future of European Competitiveness – In-Depth Analysis and Recommendations*, Ibid.

<sup>12</sup> Frans G. von der Dunk, “The European Union and Space—Space for Competition?” in *Proceedings of the 61st Colloquium on the Law of Outer Space* (Space Generation Advisory Council, 2008), <https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1107&context=spacelaw>.

<sup>13</sup> Ibid.

where significant legal and institutional fragmentation persists. At present, the European space governance framework is fragmented at several levels (even after the release of the draft, as most of its rules will be applied from 2030).

Firstly, the domain and policy-making space are clearly divided between the EU and its Member States. Secondly, the EU shows fragmentation vis-à-vis other European space actors which include the European Space Agency (ESA), whose mandate, although clearly institutionally distinct, nevertheless overlaps with that of the EU in several programme areas, notably those carried out under the European Union Space Programme (EUSP). This lack of legal and institutional cohesion weakens the ability of the EU to develop a coherent and competitive space policy and limits its capacity to respond to the rapidly changing landscape of challenges in space activities.<sup>14</sup> A major legal impediment is that the EU is not a signatory to the core international space treaties, including the foundational 1967 Outer Space Treaty (OST).<sup>15</sup> The OST's structure excludes supranational entities such as the EU from becoming parties,<sup>16</sup> while other treaties like the Liability Convention, Rescue Agreement, and Registration Convention permit accession by intergovernmental organizations, the EU has not pursued quasi-party status under any of these. This bars the EU from ever being considered a "state of registry" for space objects, thereby limiting its jurisdictional scope under international space law.<sup>17</sup> All legal rights and responsibilities under the UN space treaties remain with those EU Member States that are parties to them, rather than with EU institutions. Although the European Union has possessed international legal personality since the entry into force of the Lisbon Treaty (Article 47 TEU), this personality does not extend to assuming treaty obligations in areas where competence has not been conferred upon it. As space activities fall predominantly within shared or retained national competences, the Union cannot autonomously act as a party to the UN space treaties nor fully represent European space interests at the global level.

Within the EU legal order, fragmentation is further entrenched by the limited competences granted to the Union in space law. Article 189(2) of the Treaty on the Functioning of the European Union (TFEU) allows the EU to legislate for supporting space activities, including creating a European space programme. It clearly prohibits the harmonization of Member States' laws and regulations, thus allowing various national legislations on licensing, liability, safety, and access to the market to remain.<sup>18</sup> These national laws express varying strategic priorities, economic capacities, and legal traditions and reflect these differences through a kind of patchwork legal framework rather than a unitary regime. But this is where the second

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<sup>14</sup> Ibid.

<sup>15</sup> United Nations, *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies* (Outer Space Treaty), opened for signature January 27, 1967, entered into force October 10, 1967, 610 U.N.T.S. 205, <https://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/outerspacetreaty.html>

<sup>16</sup> The Outer Space Treaty allows only states as parties; see esp. Art. XIV. Arts. VI and XIII, moreover, provide that the international responsibility for space activities conducted by intergovernmental organizations ultimately (also) resides with the individual member states who have to properly address all complications arising from the involvement of such organizations in this regard.

<sup>17</sup> Ibid.

<sup>18</sup> Ibid.

problem comes in, which assaults the very core of the EU legal order as evolved over time by its member states. On the one hand, in areas of competition, free trade, and market regulation, the European treaties accord a robust and overarching function to the EU institutions. The Internal Market has been in existence for a long time for the free movement of goods<sup>19</sup> and services,<sup>20</sup> as well as capital and individuals for economic purposes; that is to say, hurdles like import/export duties and quotas among Member States have been eliminated and subject to some exceptions. Taxation policies are increasingly harmonized among Member States,<sup>21</sup> and external trade competences have been transferred from individual states to the EU institutions, all within the framework of EU lawmaking.<sup>22</sup> Most importantly, the EU institutions, particularly the European Commission, are tasked with ensuring free and fair competition within this Internal Market, including prohibitions on cartels, monopolies, and improper state aid<sup>23</sup>, when such issues have a significant international impact. On the other hand, this comprehensive Internal Market (formerly Common Market) regime was never intended to apply to the space sector, which in 1957 was nearly nonexistent in Europe, even in the public sector, while the private European space industry only began to emerge in the 1980s with operators like SES (Société Européenne des Satellites).<sup>24</sup> For this reason, the EU's initial attention to space was very general, and no significant initiatives were undertaken to exercise standard EU competences in this field. This lack of attention was also shaped by the sector's connection to security matters, on which the Union had been systematically excluded for decades.<sup>25</sup> It was not until 1994 that the EU promulgated its first space-themed directive, the Satellite Directive<sup>26</sup>, addressing the liberalization of the satellite telecommunications market. This proved that the EU could enact legislation in space-themed areas through existing legal competences, though this remained the rule rather than the exception. At the institutional level, fragmentation also arises from the parallel existence of ESA, an intergovernmental agency with its own programmes, memberships, and procurement policies, alongside the EU's space initiatives such as the European Union Space Programme.<sup>27</sup> The parallel existence of ESA and EU programmes with varying aims and governing structures exemplifies the persistent institutional fragmentation paralyzing Europe's potential to be a single space power.

This fragmented institutional and especially legal landscape undermines Europe's competitiveness; The increasing commercialization and militarization of space require rapid and coherent responses; something difficult to achieve with Europe's current divided approach and which this thesis will try to analyze, highlighting the steps taken in order to fix this dilemma by making one unified EU space law, which also brings challenges.

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<sup>19</sup> See Arts. 28–37, Treaty on the Functioning of the European Union.

<sup>20</sup> See Arts. 56–62, Treaty on the Functioning of the European Union.

<sup>21</sup> See Arts. 110–113, Treaty on the Functioning of the European Union.

<sup>22</sup> Von der Dunk, Frans G. "The European Union and Space—Space for Competition?" *Ibid.*

<sup>23</sup> See Arts. 101–109, Treaty on the Functioning of the European Union.

<sup>24</sup> See, e.g., K. Madders, *A New Force at a New Frontier* (1997), 528–32.

<sup>25</sup> See F. G. von der Dunk, *Europe and Security Issues in Space: The Institutional Setting*, 4 *Space and Defense* (2010), 71–99.

<sup>26</sup> Commission Directive 94/46/EC of 13 October 1994 amending Directive 88/301/EEC and Directive 90/388/EEC with regard to satellite communications (Satellite Directive), OJ L 268/15 (1994).

<sup>27</sup> Frans G. von der Dunk, "The European Union and Space—Space for Competition?" *Ibid.*

## **2. Purpose of the study**

The core purpose of this study is to establish that while technological advancements remain the fundamental facilitator in the development of the space sector, they can't be used optimally without a comprehensive legal and policy framework. Without a coordinated legal and policy framework, progress can be weak, and long-term objectives such as autonomy, resilience, and competitiveness in outer space may be jeopardized. This study focuses in particular on the European Union and thus is a case study through which it illustrates how legal fragmentation, among national legislation, regional, and emerging EU programs, is suffocating the development of a single, strategic vision for space governance. On the basis of a reflection of the legislative framework and regional policy measures in the EU, the study identifies that the lack of legal cooperation and legal coherence are two of the most important dimensions restricting Europe's role and position in the international space arena. With the growing presence of “new space actors”<sup>28</sup> interested in changing or adopting national space laws, the EU experience offers some crucial lessons. One of the main arguments of the study is that national legal systems, though necessary, are not enough in themselves. For national legislation to be conducive to innovation and competitiveness, it has to be placed within a richer, clearly defined strategy of regulatory coordination, public-private partnership, and cross-border cooperation. Lastly, this research posits that the establishment of a harmonized and binding European space law could not only address the long-standing issues of fragmentation but also help create a more stable and attractive environment for investment, research, and foreign collaboration in the space sector. However, it needs to be supported by other factors, other than that it would play against the EU's goal.

## **3. Research questions and hypothesis**

In light of the above considerations, the present thesis is guided by the following research questions:

1. What are the practical manifestations of the fragmentation of EU member states' space laws?
2. At the regional level, to what extent were the existing EU instruments tailored to the particular characteristics of space activities?
3. How does the emerging regime of space law within the EU compared to that of leading space-faring nations like the United States or China?
4. Would the creation of a common EU space Act significantly contribute to the Union's goal of becoming strategically autonomous in outer space?
5. Does the EU have the legal competence to adopt a harmonized space law? And how can it play the role of a global space actor and regulator if it is not a signatory to the UN space treaties?
6. Does the draft of the EU Space Act cover the set of issues needed?

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<sup>28</sup> United Nations Office for Outer Space Affairs, *Space Law for New Space Actors – Advisory Services*, accessed June 17, 2025, <https://www.unoosa.org/oosa/ourwork/spacelaw/capacitybuilding/advisory-services/index.html>.

## 7. Would its implementation be easy?

To answer these questions, the study is structured around a single primary hypothesis, supported by two secondary sub-hypotheses. The general assumption is that the lack of an EU-harmonized legal order has been a high price for the EU's ability to build a robust, independent presence in outer space. This gap in legal fragmentation is perceived to be one of the major factors contributing to the Union's lack of competitiveness, as well as its strategic autonomy in the field of space in the long term. The first sub-hypothesis is that a patchwork of national laws, along with regional regulations and institutions filled with gaps, has created a fragmented legal environment. This fragmentation has generated regulatory uncertainty, which increasingly makes it hard for private actors to function within the union. As a result, investment has been discouraged, innovation has been restrained, and the development of a dynamic and integrated European space sector has been greatly blocked. On the other hand, the second sub-hypothesis is that the development of a coherent and consistent EU space law would be able to address such challenges. By establishing legal certainty and a less fragmented regulatory framework, such a law would be able to lead to predictability and consistency for the purpose of attracting investment and supporting cooperation among Member States. In so doing, it would provide the foundations for an independent and competitive European outer space capacity; a consequence in line with wider EU objectives of strategic autonomy and industrial leadership.

## **II. Methodology**

This research adopts a primarily doctrinal legal analysis supplemented with a comparative and critical approach. The study critically examines the existing legal provision for regulating space activities in the European Union in a systematic analysis of the EU primary and secondary sources of law and national space legislation in selected EU Member States. Through this comparative legal method, critical divergences and convergences in member states' regulatory frameworks; above all, under themes of licensing processes, liability frameworks, and private sector involvement. The normative aspect of the research not only interprets existing law provisions but also examines their adequacy in serving broader EU policy goals such as competitiveness and strategic autonomy in outer space. Comparative legal examination goes beyond the EU geographic limits, to examine more centralized approaches to law among developed space powers, specifically the United States and China. In addition, the research is also critically observing the most recent policy efforts, especially the debates regarding shaping unified EU space law. By combining legal interpretation with insights from expert interviews conducted during the course of relevant space law conferences and meetings (These interviews, which typically consisted of one or two targeted questions posed to sector professionals prior to the release of the EU Space Act proposal, included discussions with experts such as with Hermann Ludwig Moeller, the Director of the European Space Policy Institute (ESPI) during an event in the Institute, and Mr. Guillaume de La Brosse, Head of Unit for Innovation and New Space (Space Defence) at the European Commission, at the EU Space Days event, among others. The intent and purpose of these discussions were not the incorporation of the feedback offered by the participants into the body of the analysis presented in the thesis. Instead, they were an intellectual sounding board that aided the further clarification of the fundamental

concepts presented and the identification of the most appropriate analytical route to be taken. The feedback offered by the participants was beneficial in the more precise and appropriate development of the overall argument presented. The research combines empirical awareness with doctrinal interpretation. Such qualitative feedback presents a more realistic view of how legal fragmentation manifests in real space governance and more informed suggestions for additional regulatory development. Sources include treaties, EU legislation, national space law, policy reports, academic work, and institutional papers. Research also draws on international space law instruments and soft law rules that have been adopted by the United Nations. Together, the multi-method offers a tough contextualized and critical legal analysis of the challenges and opportunities of EU space governance.

### **III. Structure**

This thesis has two principal parts, each of which is further subdivided into three chapters. Each chapter is further broken down into sections and subsections to facilitate an exhaustive and methodical discussion of the research questions.

**PART I**, titled *A Fragmented Approach: Law as a Hindrance to EU Space Activities*, explores the existing legal fragmentation of the European Union's space regulation. It begins with *Chapter 1: EU Member States National Space Law*, which overviews legislation on the national stage and its implications on legal coherence. *Chapter 2: EU Regional Space Legislation* examines the EU-level implemented legal frameworks and their interconnection with national schemes. *Chapter 3: Comparing EU Space Law Framework to Other Space Powers: U.S, A Structured Approach* locates the EU's legal framework in comparative perspective with world space great powers to highlight structural and strategic differences.

Moving on to **PART II**, titled *A Unified Approach: Towards a Harmonized EU Space Law for a Competitive Position in Space*, analysis is directed towards possible solutions and the way forward. *Chapter 4: The Need for an EU Strategic Autonomy in Outer Space; Using Law as A Tool* emphasizes the means through which legal harmonization can promote autonomy and competitiveness. *Chapter 5: Assessing the Legal Basis for EU Action in Space Law: Competence, Procedures, and Expectations* examines the Union's legal competences and the procedural challenges of adopting a shared space law. Finally, *Chapter 6: The EU Space Law Proposal: A Legal Analysis of Its Scope, Implications, and Future Enforcement* provides a comprehensive critique of the EU draft space law, outlining its anticipated role as it restructures the Union's policy towards space governance.

### **IV. Main Findings and Conclusions**

The current European space governance structure is based on a structurally fragmented environment. As discussed within *Chapter 1* of this thesis, this fragmentation takes place at a vertical level between the national legal systems and the emerging regulatory role of the Union, as well as a horizontal level between the national space laws of the different Member States. As shown within the comparative analysis of the Austrian, Danish, Belgian, French, and Luxembourgian space laws, the differences between the European national space laws are not superficial but rather structural. These countries were chosen not to give an exhaustive overview of the European national space law, but rather to reflect the different regulatory

approaches that exist within the European Union. The differences between the European space laws are evident, as the French space law, being a technologically advanced nation with a long history of involvement within the field of space, has developed a complex yet strong legislative structure. Luxembourg, on the other hand, has developed a strategically innovative regulatory structure, acting as a pioneer within the field of space law. The cases of Belgium and Denmark, for example, illustrate the characteristics of medium-sized space actors with structured authorization systems that strive for a balance between administrative control and operational capability. The case of Austria, meanwhile, highlights the challenges and opportunities for a smaller, research-oriented space faring nation in meeting international obligations with more limited institutional capacities. These cases, therefore, illustrate that space legislation in national jurisdictions is also strongly related to their economic scale, strategic ambitions, and administrative principles. Some have opted for more extensive *ex ante* authorization and supervisory systems, reflecting a more precautionary and control-oriented logic. Others have opted for more facilitating approaches that encourage commercial involvement while meeting international obligations, particularly with regard to Article VI of the Outer Space Treaty. The result is therefore not only diversity, but also regulatory irregularity.

Fragmentation, however, does not stop at the national level; it is also found in the European regional architecture, as evidenced in **Chapter II** of this study. The co-existence of intergovernmental and supranational structures, in particular the European Space Agency with a membership mix of EU and non-EU countries, and the European Union Agency for the Space Programme working within the EU-only legal framework, results in a dual structure of European space governance, with ESA being in charge of the technical development and programme implementation, and EUSPA being in charge of operational EU programmes such as Galileo, Copernicus, GovSatCom, and IRIS<sup>2</sup>. In a certain manner, the dual structure of European space governance mirrors the vertical and horizontal fragmentation of the European space law, as identified above. Operators may need to comply with several layers of rules, including national authorization regimes, EU programme rules, and, in a few instances, ESA rules, in particular in the field of technical standards. For operators with activities in several Member States, this may imply dealing with a multitude of legal regimes, each of them specific to a particular context or programme. In this respect, as shown in **Chapter III**, the same degree of inner legal fragmentation is not a problem for either the United States or China. Both countries operate within a constitutionally centralized system, even though the underlying regulatory philosophies are significantly different.

The United States has developed a primarily federal and nationally coordinated regulatory regime for space activities. The core legislative acts, which are currently reflected in Title 51 of the U.S. Code, serve as the overarching statutory basis, with the actual implementation left to the responsibility of specialized federal agencies. For example, the licensing of launches and entries into space is the responsibility of the Federal Aviation Administration, satellite communications fall within the remit of the Federal Communications Commission, and the licensing of remote sensing activities is a task of the National Oceanic and Atmospheric Administration. However, this does not equate to fragmentation in the European sense; The system has continued with a vertical integration under federal control, with no differences in space law regulation from state to state. This has ensured a relatively coherent regulatory

environment that, although differentiated in terms of sectors, remains within a unified constitutional space. Its market-oriented character, with its inherent flexibility and support for commercial innovation, has proved instrumental in supporting the dynamism of the private sector. The Chinese regulatory model has a different character, with a strong underlying logic of the role of the state. While it has yet to develop a comprehensive and consolidated law for outer space, space activities remain subject to a range of centrally promulgated regulations, administrative measures, and strategic planning documents. The regulatory control remains centralized, with space development being strongly aligned with the underlying logic of national industrial policy. The multiple actors and normative documents represented by the various ministries do not translate into a constitutional fragmentation, but rather into a form of administrative distribution within a unified political space. The European context, however, is qualitatively different, since the structure of EU space governance is marked not only by “functional differentiation,” but by “structural dispersion in multiple legal orders.” In other words, national authorization regimes coexist with emerging EU regulatory tools, along with intergovernmental instruments, creating a multi-layered structure without constitutional unity, as in the U.S. or Chinese models. Although the Chinese model may be considered normatively dispersed, and the U.S. model administratively specialized, neither of these models faces the dual challenge of horizontal diversity among the constituent units, combined with vertical division of competence, as in the EU context.

The comparison does not imply that one model is better than another. It merely demonstrates the ease with which coherence, strategic positioning, and regulatory clarity are achieved by centralizing constitutional authority. The challenge for the European Union is not an absence of regulatory capacity, but how to resolve the tension between its current model of multi-level governance and the demands for consistency, certainty, and strategic direction in an ever more competitive global space environment.

The initiative of the Union for the creation of a common space law is also connected with the goal of enhancing European strategic autonomy, as has been examined in *Chapter IV*. Indeed, space has gradually moved from being a domain for technological pride to a key element for economic strength, security, and geopolitics. As a result, autonomy is no longer a mere concept, but it is connected with the ability to launch and control space activities without significant external dependency.

However, it should be noted that the pursuit of strategic autonomy in space is a complex issue, both at the institutional and material levels. The EU is part of a complex governance pattern in which competences, funding systems, and strategic policies for space activities are shared, coordinated, or divided between the EU, its Member States, and the European Space Agency. At the same time, space activities have a natural dual character; The civilian, commercial, and security dimensions of space activities often have a technological unity, but they have distinct legal regimes. The dual character of space activities, particularly in areas that have a direct link with security and economic competitiveness, raises legal uncertainty.

The paradox is that space is at the same time the source of autonomy and the source of exposure. The modern economy, digital infrastructure, and the military are increasingly reliant on the services provided by satellites. The more the EU depends on the services, the more

vulnerable it becomes to external actors. The aim of the EU to limit its exposure to non-EU services for launches, essential components, and data infrastructures is part of the broader strategy for enhancing autonomy. Autonomy, however, cannot be achieved through industrial means; it also has to be achieved through regulatory means that can support the integrated European space services market, that what we have called in this thesis “Law as a tool” for EU strategic autonomy in outer space.

In this regard, the proposed legal harmonization framework is an enabler. By reducing differences and establishing common rules, the proposed framework aims at creating an environment conducive to the Union’s external action. A unified legal “language” in space is not an end in itself but an essential feature of the space regulatory environment. The creation of an EU space framework is an exercise in coherence, driven by an internalization drive and an externalization drive. The EU space framework is an exercise in creating an environment conducive to the Union’s external action.

As has been shown in *Chapter V*, the discussion surrounding a binding EU space law is far from hindered by a lack of legal foundation, but rather by the complexity of the EU’s constitutional landscape. While space policy remains a shared competence and Article 189 TFEU specifically restricts harmonization by excluding the adoption of laws and regulations of the Member States in some respects, the Treaties nevertheless offer a number of different legal entry points for action. Each of Articles 189, 114, 115, and 352 TFEU offers a different normative entry point, from specific competence, through internal market harmonization, and finally through a general competence, albeit all of which must be realized within the structural confines of Article 189 TFEU (2), which maintains Member State competence in key areas. The process and the delays that have accompanied the drafting of the EU Space Act suggest that there are underlying issues that go beyond those which might be attributed to the process and drafting/technical issues. As can be seen, there are national interests and concerns, which are related to industrial competitiveness, the role of ESA, and other issues of strategic autonomy. The Commission’s June 2025 proposal for a Regulation on the EU Space Act is an important step forward from an institutional perspective, as has been examined in *Chapter VI*. The scope of the proposed Regulation is defined by safety, security, and sustainability concerns and is designed to demonstrate the need for intervention on the basis of risk management rather than industrial centralization. The key elements of the proposal include the adoption of harmonized standards in the fields of collision avoidance, orbital debris mitigation, and lifecycle risk assessment, as well as the creation of a regime of “mutual recognition” in which an authorization issued by a Member State would be valid on the entire EU territory. The “single authorization” concept directly addresses the horizontal fragmentation identified above.

The proposal is also interesting because it has an “extraterritorial” element, since operators from outside the EU, which operate in the European market, must comply with EU standards. From that perspective, the EU Act proposal follows the logic that is traditionally attributed to the so-called “Brussels effect.” The EU regulatory influence is projected beyond its territory, and its regulatory reach is exercised through the terms and conditions that grant access to its market. However, it is essential that the application of EU standards for operators outside the EU is compatible with EU obligations in the context of the World Trade Organization, the

principle of non-discrimination, and the continued applicability of the Outer Space Treaty. The space sector is different from data protection or digital markets because it is located in a particularly strategic and geopolitically sensitive environment. The effectiveness of the regulatory spill-over effect will therefore depend not only on the attractiveness of the EU market, but also on the relative strength and strategic positioning of other regulatory centers, particularly the United States and other space powers.

While the EU Space Act, if adopted with its current version, would face many challenges with regard to its implementation, it would be applicable directly across the Union as a Regulation, though the enforcement would largely be left to the Member States. This would require the Member States to establish competent authorities, modify the procedures for the authorization of activities, and adjust the technical standards with the new EU regime. In addition, national legislation that adds requirements or varying conditions would also require amendment or repeal for the purpose of fully implementing the concept of mutual recognition. There would be a risk that the national authorities might interpret the Regulation differently, leading to fragmentation at the level of application. And yet political resistance is perfectly conceivable; The reference to the legal base of Article 114 TFEU underlines the internal market dimension, but some Member States might also ask themselves whether the degree of divergence is sufficient to justify harmonization at the EU level, particularly in light of the constraints imposed by Article 189 and the principle of proportionality. Some elements of this might arguably be seen as going beyond what is necessary to redress the imbalance of the internal market. The negotiating process through the European Parliament and the Council will establish not only the extent of harmonization but also the limits of EU competence in this area.

Finally, the EU Space Act represents an essential, though transitory, step toward regulatory unification. The entry into force of the Regulation, which is not expected before the end of the decade, will be subject to political compromises and institutional coordination. If successful, the Regulation has the potential to reinforce the internal market for space services while safeguarding key national competencies in security and defense policies. The key question is how to achieve this balance effectively, moving forward towards integration and coherence without undermining the fragile balance of competences that characterizes the EU's constitutional architecture.

***Is the law enough for strategic autonomy in outer space?*** While legislative harmonization can lay the groundwork with a framework and prevent fragmentation, autonomy is just as much tied to investment, technology, and industry. The EU bodies themselves have recognized that regulatory alignment is just as much tied to large financial commitments, development of infrastructure, and programme continuity. The draft Space Act can create common standards and clear roles, but it does not create launch capabilities, supply chains, and technology autonomy. For strategic autonomy to be achieved in the space domain, it is therefore not just about regulation but about financing, strengthening European industry, securing supply chains, and integrating space capabilities into overall security and defense strategies. The cooperation has to be multi-layered between the EU and Member States, with ESA, and with international partners, as well as securing autonomy of action. Regulation is one part, but investment and policy substance are another. EU leaders themselves emphasize that there needs to be heavy

investment and industrial capacity alongside. In June 2025 MEPs called for a €60 billion multi-year EU space programme, roughly triple the current budget<sup>29</sup>; arguing that without major investment, Europe cannot compete. They warn that an EU dependent on non-EU launches or data would be “*economically weaker, vulnerable and...lacking the tools to be strategically autonomous*”.<sup>30</sup>

In this sense, it is submitted that regulation alone is insufficient to deliver autonomy in space. Although legislative harmonization can prove effective in the overall framework and in minimizing the consequences of fragmentation, it is equally important to have sustained investment, technological capability, and depth in industry. The EU institutions have recognized the need for not only legislative harmonization but also the need for financial commitment, the development of infrastructure, and the need for programme continuity. The Space Act, as it is proposed, can prove effective in the overall framework, but it cannot, by itself, establish launch capability. Therefore, strategic autonomy in space will involve a multidimensional approach that will go beyond the regulation of space activities and will also involve financing innovation, reinforcing European actors in industry, and accessing critical components as well as integrating space into broader security and defense strategies. It requires cooperation to take place on multiple levels, between EU institutions and Member States, with ESA, and with international partners, while maintaining strategic autonomy for the EU. Thus, from this analysis, the main research questions and hypotheses established at the beginning of this thesis are proven. The persistence of fragmentation, the limitations of EU competence set out by the Treaty, and the geopolitical influences on space governance all point to the same fact: legal harmonization is not only necessary but also insufficient. The research findings here point to the proposition that a comprehensive approach to regulation and strategic industrial policy is necessary to achieve the EU’s objective of strategic autonomy in the new global order of space activities.

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<sup>29</sup> Lucia Del Bello, "MEPs Call for €60B Standalone EU Space Programme," *Science|Business*, June 20, 2025, <https://sciencebusiness.net/news/aerospace/meps-call-eu60b-standalone-eu-space-programme>.

<sup>30</sup> Ibid.



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### List of publications related to the dissertation

#### Articles, studies (7)

- Mefteh, B.:** Balancing the Space Economy and Sustainability: Legal Frameworks and Policy Initiatives for Responsible Space Activities.  
*Essays of Faculty of Law University of Pécs, Yearbook of 2024.* 2025 (1), 143-161, 2025.  
ISSN: 2061 8824.  
DOI: <http://dx.doi.org/10.15170/studia.2025.01.09>  
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- Mefteh, B.:** Spaceports: The Missing Link in International Space Law?  
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7. **Mefteh, B.:** Space economy: a privilege not accessible to everyone?

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DOI: <http://dx.doi.org/10.21868/PGnG.2023.1.3>.

Level of HAS Committee on Legal and Political Sciences: C

Conference presentations (1)

8. **Mefteh, B.:** Space security and its new challenges.

In: Doktoranduszok fóruma, 2022. Szerk.: Jámborné Róth Erika, Miskolci Egyetem, Állam- és Jogtudományi Kar, Miskolc, 27-31, 2023.

### List of other publications

Conference presentations (1)

9. **Mefteh, B.:** Exploring the legal frontiers of sustainable development in the space economy: Challenges and prospects.

In: "Fenntartható Gazdaság - Fenntartható Társadalom" : Nemzetközi Tudományos Konferencia : 30 éves a debreceni közgazdasági és üzleti felsőoktatási képzés = "Sustainable Economy - Sustainable Society" : International Scientific Conference : Celebrating 30 Years of Economics and Business Higher Education in Debrecen. Szerk.: Dajnoki Krisztina, Szenderák János, Erdey László, Fenyves Veronika, Debreceni Egyetem, Debrecen, 21, 2024. ISBN: 9789634906247

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