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THE EUROPEAN UNION AS AN ACTOR OF INTERNATIONAL SPACE LAW

Diploma Thesis

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INTRODUCTION

When mankind first achieved the ability to venture beyond Earth, it became apparent to all that this marked only the commencement of a grand journey. The exploration and exploitation of outer space offer a multitude of opportunities, many of which hold great potential for the benefit of humanity, while others may not yield such favourable outcomes. To mitigate potential conflicts and to define the basic rules of conducting this extraordinary human endeavour, the new branch of law emerged. Given that states and intergovernmental organizations (IGO) were the primary actors engaged in space projects at the time, it was only natural that international law would begin regulating mankind's space activities. Thus, in the 1960s and 70s the core of international space law was developed.

Nowadays, the space sector is no longer the exclusive domain of states and IGOs. Other actors have started to get involved in space activities and are challenging the international space law system as we know it. Undoubtedly, the European Union (EU), with its unique legal structure, competences, and international relations, is one of them. Being involved indirectly in space since the mid-1980s and directly since the late 1990s, the EU has already gone through significant space evolution and achievements, and yet, to the general public the EU's involvement in space is fairly unknown. No wonder, after all, the EU was not originally established to conduct space activities but rather for entirely different reasons. Nevertheless, the EU's space programmes are no longer only supplementary and negligible activities and serve the EU citizens and their governments on a daily basis. Therefore, they deserve our attention and closer knowledge of what they encompass and how they work.

The main objective of this thesis is to provide a comprehensive outlook on the EU's position in the system of international space law. Employing analytical, comparative, descriptive, and interpretative methods, the thesis examines the evolution of the EU's space involvement and competence over the years, its structure, legal regulations, nature, and individual components of the existing space programme of the EU, space dimension in relations between the EU and the United Nations (UN) and the EU position on the selected UN space treaties, and finally cooperation between the EU and European Space Agency (ESA) as the EU's biggest international space partner.

This thesis is divided into four chapters which are further elaborated into several subchapters.

The first chapter discusses the historical development of the EU's involvement in space whilst focusing on the rationale behind its decision to get engaged in space activities and on a brief analysis of the most important and relevant legislation that eventually led to the EU's space competence as we know it. In this chapter, the author also examines the EU's space competence itself, describes and interprets the nature of this competence in light of EU law and provides his outlook on its limitations.

The second chapter provides an analysis of the current EU space activities by examining the most recent legal regulations governing the space programme of the EU which underwent significant consolidation in 2021. The author explores how the EU space legislation has changed or not changed, what this new regulatory framework brought into the EU space endeavours, and if indeed it delivered on its objectives to straightforward rules, governance, and structure of the EU space programme. In addition, by presenting the most important aspects of different components of the EU space programme, the thesis explains the mechanism and nature of the EU space activities and demonstrates whether the EU space programme can still be considered as purely civilian or whether, as new projects are developed, this designation is no longer valid. By analysing the EU space programme, the author also hopes to increase awareness of the EU's space activities.

In the third chapter, the space-related aspects of relations between the EU and the UN are discussed, focusing mainly on the EU's position on the Outer Space Treaty, the Liability Convention, and the Registration Convention, its impact on registration and liability of the EU's space objects, outlook to possible future developments in this matter as well as brief introduction of the EU's status within the UN itself and its respective space organs. For the avoidance of doubt, no effort will be attempted to address these matters to the detail and only the most important aspects needed for this thesis will be discussed.

The fourth and last chapter addresses relations between the EU and ESA, providing a brief introduction to ESA, analysing the legal framework on which their cooperation is built, exploring differences in the operation of these entities, and considering the existing relationship between the two, with an evaluation of prospects of their future cooperation and roles in the European space sector.

1. HISTORICAL OVERVIEW OF THE EUROPEAN COMMUNITIES/UNION SPACE ACTIVITIES

1.1. Pre-involvement period

Origins of the involvement of the European Communities (EC) in space activities can be dated to the mid-1980s when the Single European Act (SEA) was adopted. Until then the EC did not play any role in the European space effort, did not possess any material competence in this area, and probably even more substantially, did not have any real interest in space. For a proper understanding of this position, we first have to turn our attention to the background on which this whole European collaboration was founded and understand its rationale.

After the end of World War II, one thing became abundantly clear. Europe, we had known for centuries, where states fought among themselves in an attempt to achieve hegemony, was no longer sustainable. The horrors of World War II were so terrible that even those longest-lasting disputes had to be set aside. To prevent any further conflicts, the European Coal and Steel Community (ECSC)[1] was established in 1951, creating a common market for coal and steel among its member states[2] and thus regulating these relevant industries. The ECSC was closely followed by the European Atomic Energy Community (Euratom)[3] and the European Economic Community (EEC)[4] founded in 1957 by an identical set of member states as the ECSC. In 1965 the Merger Treaty was signed, unifying the executive institutions of these communities. Although each community remained its legal independence, from this moment they were collectively known as the EC.

The main objective of the EC was the creation of the so-called single market, and to this end, the law of the EC was equipped with necessary instruments. Originally it addressed almost exclusively the issues of cross-border trade and free and fair competition among the member states, over time, the competences were extended to include broader

[1] *Treaty establishing the European Coal and Steel Community*. Paris, done April 18, 1951, entered into force July 23, 1952, expired July 23, 2002. Available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:11951K:EN:PDF.

[2] Member states of the ECSC were Belgium, France, Italy, Luxembourg, the Netherlands, and West Germany.

[3] *Treaty establishing the European Atomic Energy Community*. Rome, done March 25, 1957, entered into force on January 1, 1958. Consolidated version of the Treaty is available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A12012A%2FTXT.

[4] *Treaty establishing the European Economic Community (EEC Treaty)*. Rome, done March 25, 1957, entered into force on January 1, 1958. Currently named the Treaty on the Functioning of the European Union and available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12016ME%2FTXT.

economic matters, from taxation and harmonization of national economic legislation to common currency, and finally even societal issues, such as education, public health, or foreign policy[5]. Undoubtedly, it was the EEC who played the most important role in this afford, since the ECSC and Euratom specified in strategic, but very circumscribed areas of the European economies. However, even with the expansion of the EC powers and gradual growth of the member states[6], outer space remained out of the EC's scope of interest, and the reason for this was quite straightforward. The European space sector until the mid-1980s lacked the involvement of the private sector and was mostly executed by states and public IGOs.[7] The above-summarized instruments of the EC law could essentially and logically be applied only to markets where the significant private element was present. Since there was no such significant element, it simply did not make sense for the EC to be involved in space issues.[8] Furthermore, based on the absence of the private sector in European space activities, it could also be argued that the member states as well as the EC did not consider the space sector to be sufficiently beneficial for Europe and its citizens at that time, thus leaving the European space efforts entirely to ESA.

However, in the mid-1980s, this attitude had fundamentally changed. The technological advance, in particular that of the United States began to encourage the European industry. The explosive increase in research and development (R&D) spending across the member states of the EC gave rise to an irresistible compulsion to establish a major economic area within the member states of the EC to overcome the fragmentation of the European markets.[9] Following the rapid developments in satellite communication after the first private satellite operator SES in Luxembourg was established in 1985,[10] this need was especially present within this aspiring space sector of the EC. All of a sudden, the need arose for the EC to formulate its R&D policies beyond the spheres of competences of the

[5] VON DER DUNK, Frans G., TRONCHETTI, Fabio, *Handbook of Space Law*. Cheltenham: Edward Elgar Publishing, 2015. p. 243-244. ISBN: 978-17-8100-035-9.
[6] The EC was enlarged to include Denmark, Ireland, and the United Kingdom in 1973, Greece in 1981, and Portugal and Spain in 1986.
[7] VON DER DUNK, Frans G., TRONCHETTI, Fabio, *Handbook of Space Law*. p. 244.
[8] Ibid.
[9] NARJES, Karl-Heinz, *The Integrating Effect of the Research Policy of the European Communities*. In: Angewandte Chemie International Edition in English, Volume 29, Issue 11. VCH GmbH 1990. p. 1190. Available at: https://onlinelibrary.wiley.com/doi/epdf/10.1002/anie.199011891?saml_referrer.
[10] VON DER DUNK, Frans G., *The European Union and the Outer Space Treaty: Will the Twain Ever Meet?*. In: Fifty Years of the Outer Space Treaty: Tracing the Journey. New Delhi: Pentagon Press, 2017. p. 79. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1089&context=spacelaw.

Euratom and the ECSC, to keep pace with the United States or Japan. After a few years of preparations, negations, and compromises SEA was adopted.

1.2. Single European Act

SEA, signed in 1986 and came into effect in 1987, was the first major revision of the EEC Treaty. The EC which has existed for almost 30 years had to this moment never been revised despite several enlargements and gradual enhancement of collaboration. With the adoption of SEA various institutional and substantive changes were introduced. [11] Its main objective was to deepen European integration, especially in the area of fundamental market freedoms, thus creating the European single market by 1993. It was SEA which gave the EC its first level of space competences. However, that competence was only part of the broader competences concerning R&D and you will not find any explicit mention of the space in SEA. In Article 24 of SEA which added Articles 130f through 130q to the EEC Treaty, the EC entrusted its institutions with the setting up and financing of R&D framework programmes as well as other, partly legislative instruments to enhance R&D, in order to strengthen the scientific and technological basis of the European industry, thus making it more competitive at international level.[12] References to R&D were widely accepted to include space-related scientific and technological activities.[13] SEA also stipulated that decisions on the framework programmes, which were implemented through specific programmes required unanimity, whilst the decisions on the specific programmes could had be taken by the means of a qualified majority. Furthermore, SEA envisaged coordination of the R&D policies between the member states and the EC.

1.3. Satellite Directive and Database Directive

Although SEA gave the EC competences that could potentially impact the European space sector, SEA itself focused mainly on R&D policies rather than on legal regulation of R&D activities, let alone on legal regulation of the space sector. At that time the EC still did not see any particular need to legally regulate this sector as the private element and clear commercial benefit were still not so significantly present in the European space

[11] CRAIG, Paul., DE BÚRCA, Gráinne, *EU Law: Text, Cases, and Materials*. 7th edition. Oxford: University Press, 2020. p. 6-7. ISBN: 978-01-9885-664-1.
[12] Article 24, *Single European Act*. Luxembourg/The Hague, done 17/28 February 1986, entered into force 1 July 1987, Available at: https://eur-lex.europa.eu/resource.html?uri=cellar:a519205f-924a-4978-96a2-b9af8a598b85.0004.02/DOC_1&format=PDF. p. 10.
[13] VON DER DUNK, Frans G., *The EU Space Competence as per the Treaty of Lisbon: Sea Change or Empty Shell?*. In: Proceedings of the International Institute of Space Law. The Hague: Eleven International, 2011. p 383. Available at: https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1065&context=spacelaw.

market. However, it provided the much-needed basis for what was about to come. The increasing commercialization and privatization of international telecommunications including satellite communications in the late 1980s[14] essentially pave the way for the first major piece of the EU[15] legislation regulating the area of space activities, the so-called "Satellite Directive" in 1994.[16] Satellite Directive amended the existing Directive on Terminal Equipment and Directive on Competition in Telecommunications Services so that they could be applied to the satellite communications sector, thereby creating the regulatory framework for the implementation of internal market principles, such as the prohibition of concerted anti-competitive practices or the prohibition of abuse of dominant and monopoly positions in that market.[17] Satellite Directive in conjunction with several other legislative and policy instruments also led to the privatisation of the three major international satellite operators INTELSAT, INMARSAT and EUTELSAT.

In many aspects, Satellite Directive aimed to establish the satellite communications sector as part of the single market of the EU. Although this was not completely finalised by the adoption of Satellite Directive, it marked the beginning of the EU's direct involvement in the human space endeavour. With the introduction of Satellite Directive, the EU for the first time started to regulate the relevant area of space activities, thus becoming the actor and creator of space law.

As already mentioned, the most substantial drivers for the EC/EU's interest in entering the space sector were commercial applications, involvement of private persons and clear benefit for the community from the respective activity. Therefore, it was only logical when satellite remote sensing fulfilled these criteria in the 1990s and the entities using this technology found themselves in need of specific legal instruments to protect the copyrights deriving from this activity[18], the EU joined and lead this effort to develop such a legal tool. The problem requiring the EU's legislative attention was that the existing intellectual property protection simply did not cover the data derived from the satellite remote sensing and therefore there was an imminent risk, especially in some jurisdictions,

[14] VON DER DUNK, Frans G., TRONCHETTI, Fabio, *Handbook of Space Law*, p. 246.
[15] The EU was established by the Treaty on European Union in 1993 and essentially replaced the EC.
[16] *Commission Directive 94/46/EC of 13 October 1994 amending Directive 88/301/EEC and Directive 90/388/EEC in particular with regard to satellite communications.* 13 October 1994, (hereafter Satellite Directive), Available at: https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A31994L0046.
[17] Articles 1-3, *Satellite Directive*.
[18] VON DER DUNK, Frans G., *The EU Space Competence as per the Treaty of Lisbon: Sea Change or Empty Shell?*. p. 384.

that the distribution of those data could cause certain problems.[19] As a result, Database Directive[20] was adopted in 1996, which, among other things, dealt with this issue. It was decided that the data derived from satellite remote sensing should be protected through a broader concept of databases and so Database Directive provided them with *sui generis* protection wherever the copyright would not suffice for such purpose.[21] However, these *sui generis* rights applied only to certain databases which met the requirements, such as non-originality, individual accessibility, or a substantial investment. Original databases were already protected by copyright so there was no need to include them in this protection.

Satellite Directive and Database Directive marked a breakthrough in the EU's approach to its involvement in space. Until their adoption, the EC/EU had no or very limited legal tools to regulate any specific space activity. Although both being very targeted legislative instruments which did not aim to establish any specific space project or programme of the EU, their impact on the EU's space endeavours cannot be ignored.

1.4. The first space projects of the European Union

Until the late 1990s and early 2000s, the involvement of the EU in space activities had taken place almost exclusively in the political and legal area by way of adopting Directives and Regulations mainly addressing market and R&D aspects of certain space activities. However, with the increasing potential of space exploitation and its clear advantages for Europe, the EU decided to launch its first real space project. In 1994, after the initial ideas for a common approach with the US and Russia had failed,[22] the EU had taken the policy decision to become involved in the so-called Global Navigation Satellite System (GNSS) and decided to develop its own autonomous satellite navigation system.[23] The correctness of this decision was further confirmed by the clear intentions of the US to make its Global Positioning System (GPS) a single and exclusive GNSS, thus creating

[19] VON DER DUNK, Frans G., TRONCHETTI, Fabio, *Handbook of Space Law*, p. 249.
[20] *Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases* (hereafter Database Directive). 11 March 1996, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A31996L0009.
[21] VON DER DUNK, Frans G., TRONCHETTI, Fabio, *Handbook of Space Law*, p. 250.
[22] VON DER DUNK, Frans G., *The European Union and the Outer Space Treaty: Will the Twain Ever Meet?*. p. 80.
[23] *Council Resolution on the European Contribution to the Development of a Global Navigation Satellite System*. 19 December 1994, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A31994Y1231%2803%29.

potential political and technological dependences of the EU and the Member States on the US-operated network.[24]

As a result of these circumstances, the European Geostationary Navigation Overlay System (EGNOS) and Galileo came to life. With the introduction and further development of these projects, the EU became an actual space player itself. For a more comprehensive analysis of EGNOS, Galileo and other space projects of the EU, please see subchapter 2.3 where the brief history, description of projects and regulatory framework will be provided.

1.5. Treaty of Lisbon and space competence of the European Union

Treaty of Lisbon[25] signed by the Member States on 13 December 2007 and entered into force on 1 December 2009 represented one of the most notable reforms of the EU. It amended and renamed the existing treaties, which are from this time known as Treaty on the European Union (TEU) and Treaty on the Functioning of the European Union (TFEU). Treaty of Lisbon brought many institutional and material changes, such as the expansion of the use of qualified majority voting in the Council of the EU ("the Council"), abolishing the pillar structure and enshrining the legal personality of the EU as a whole, or introducing the Charter of Fundamental Rights. Its adoption was preceded by the failed ratification[26] of the Constitutional Treaty which sought to reform the EU perhaps more ambitiously than the Member States were willing to accept at the time. Nevertheless, many aspects incorporated in the Constitutional Treaty were not abandoned completely. On the contrary, although somewhat revised, they have been included in the Treaty of Lisbon. This also applies to the space competence of the EU.

The development of the first autonomous EU space projects sparked a long overdue political discussion on the future of the EU's space policy and law. Even though Galileo and EGNOS were firmly embedded in the structure of the EU activities at the time of the adoption of Treaty of Lisbon, there was still no explicit reference to space in the EU treaties. This lack of clarity regarding the EU's jurisdiction concerning space hindered

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[24] HOFMANNOVÁ, Mahulena, *Penetration of Union Law into the Space Sector*. In: PETRLÍK, David, BOBEK, Michal, PASSER, Jan, MASSON, Antoine, *Évolution des rapports entre les ordres juridiques de l'Union européenne, international et nationaux, Liber amicorum Jiří Malenovský*. Brussels: BRUYLANT, 2020. p. 194. ISBN: 978-28-0276-686-5.

[25] *Treaty of Lisbon amending the Treaty on European Union and the Treaty establishing the European Community*. Lisbon, done December 13, 2007, entered into force on December 1, 2009.

[26] Constitutional Treaty was rejected by 55% of French voters in a referendum held on 29 May 2005 and by 61% of Dutch voters in a referendum held on 1 June 2005.

the formulation of a consistent and comprehensive policy in the field of space activities.[27] This uncertainty was ended by Treaty of Lisbon when the competence of the EU in space was codified in TFEU. It is contained in Title XIX called Research and Technological Development and Space, specifically in Article 189, providing the following:

1. *To promote scientific and technical progress, industrial competitiveness and the implementation of its policies, the Union shall draw up a European space policy. To this end, it may promote joint initiatives, support research and technological development and coordinate the efforts needed for the exploration and exploitation of space.*
2. *To contribute to attaining the objectives referred to in paragraph 1, the European Parliament and the Council, acting in accordance with the ordinary legislative procedure, shall establish the necessary measures, which may take the form of a European space programme, excluding any harmonisation of the laws and regulations of the Member States.*
3. *The Union shall establish any appropriate relations with the European Space Agency.*
4. *This Article shall be without prejudice to the other provisions of this Title*.[28]

To fully understand the scope of the EU's space competence, we must first consider categories of the EU competences. They are listed in Articles 2 through 6 of TFEU and they are (i) exclusive competence (Article 3), (ii) shared competence (Article 4), and (iii) supporting competence (Article 6). In areas which fall into the exclusive competence, only the EU may legislate and adopt legally binding acts and the Member States can do so themselves only if so empowered by the EU, whereas in the areas of shared competence both the EU and the Member State can legislate and adopt legally binding acts, but the Member States can do so only to the extent that the EU has not exercised its competence. The second part of the previous sentence not only defines shared competence but also sets out one of the most essential principles connected to shared competence, the so-called pre-emption principle. On the other hand, in the areas of supporting competence, the EU is limited only to supplementary and coordinative activities.

[27] MASSON-ZWAAN, Tanja, HOFMANN, Mahulena, *Introduction to Space Law*. 4th edition. Austin: Kluwer Law International, 2019. p. 58. ISBN: 978-90-4116-060-7.
[28] Article 189, *Treaty on the Functioning of the European Union* (hereafter TFEU). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012E%2FTXT.

TFEU included space competence in the category of shared competence. However, when we look closely at Article 4 of TFEU, we will find out that space competence is not what you would call standard shared competence. Article 4 paragraph 2 identifies principal areas falling under the category of shared competence. This list is not exhaustive as the wording of this article implies.[29] Nevertheless, the space is not mentioned in paragraph 2, but in a separate paragraph 3. The exclusion of certain areas to paragraph 3, which was the result of the political compromise of the Member States in negotiations of Treaty of Lisbon,[30] indicates that although enlisted as being part of the shared competence, their application is somewhat different. Paragraph 3 explicitly excludes the pre-emption principle from applying to these areas, meaning that the EU and the Member States can carry out activities simultaneously without breach of obligations under EU law. Space competence is therefore commonly referred to as "parallel competence".[31]

The affirmation that space competence is indeed parallel competence can also be found in Article 189 itself, where paragraph 2 explicitly excludes any harmonisation of the laws and regulations of the Member States. This provides for a significant limitation of the EU's space competence when it effectively prohibits the EU to harmonise the already existing national space law of the Member States[32] which, under circumstances of "standard" shared competences, would be possible. Although there are several interpretations as to what this limitation means,[33] its implications are nevertheless the same: it deprives the EU of the possibility to adopt measures leading to the general common EU approach to outer space, keeps the EU from speaking with only one voice when it comes to outer space, prevents the EU's space competence from fulfilling its potential as the genuinely comprehensive legal tool and thus weakens the position of the EU in comparison to its biggest international partners.

Article 189 has also given the mandate to the EU to draw up a European space programme, to promote scientific and technical progress as well as joint initiatives and to coordinate the exploration and exploitation of space. It enabled the EU to further develop

[29] TOMÁŠEK, Michal, ŠMEJKAL, Václav et al., *Smlouva o EU. Smlouva o fungování EU. Listina základních práv EU. Komentář*. Prague: Wolters Kluwer, 2022. p.22. ISBN: 978-80-7676-508-5.
[30] TOMÁŠEK, Michal, ŠMEJKAL, Václav et al. *Smlouva o EU. Smlouva o fungování EU. Listina základních práv EU. Komentář*. p.25
[31] MASSON-ZWAAN, Tanja, HOFMANN, Mahulena, *Introduction to Space Law*. p. 59.
[32] Austria, Belgium, Denmark, France, Luxembourg, Netherlands, and Sweden currently have a comprehensive national space law.
[33] HOFMANNOVÁ, Mahulena., *Penetration of Union Law into the Space Sector*. p. 199.

its existing programmes and establish new ones without having to legitimise its involvement by the application of the free market, competition principles or other provisions of EU law as it was until then. By the introduction of Article 189, the EU has committed itself to adopting the comprehensive space programme that would implement the set objectives. Thus, in 2021 the European Union Space Programme came to life.

2. THE EUROPEAN UNION SPACE PROGRAMME

2.1. General information

The European Union Space Programme ("the Programme") was established by the Regulation (EU) 2021/696[34] ("the Regulation") and represents the first-ever integrated and unified space programme of the EU. The Regulation formed the Programme for the duration of the Multiannual Financial Framework ("MFF") 2021-2027, its budget for this period, the forms, and rules of funding as well as the rules for the implementation of the Programme. It allocated the largest budget the EU has ever provided for space activities – EUR 14,880 billion.[35] Alongside the Programme, the Regulation also established the European Union Agency for the Space Programme ("EUSPA") which replaced and succeeded the existing European GNSS Agency ("GSA") and is responsible for the day-to-day operation and further contribution to and development of the Programme. The Regulation was adopted on 28 April 2021 and entered into force on 12 May 2021. However, it has retroactive effect from 1 January 2021.[36] The reason for this retroactivity was to ensure continuity in providing existing services and to allow the implementation of the Programme to start from the beginning of the MFF 2021-2027.

2.1.1. Background

The first traces of the Programme can be dated to 2016 when the European Commission ("the Commission") issued its communication entitled "Space Strategy for Europe"[37] where the new space strategy for Europe was set out. There the Commission emphasized the strategic importance of the space sector for the EU, the need for the European space

[34] *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* (hereafter Regulation establishing the Programme and EUSPA). 28 April 2021, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32021R0696.
[35] Article 11, *Regulation establishing the Programme and EUSPA*.
[36] Article 111, *Regulation establishing the Programme and EUSPA*.
[37] *COM (2016) 705 final.* 26 October 2016, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2016%3A705%3AFIN.

industry to adapt to the changing global environment and the need for continued enhancement of services offered by the EU. This position of the Commission was later affirmed by the European Parliament[38] ("Parliament") as well as the Council of the EU[39] ("the Council"), which in particular encouraged the Commission and the Member States to analyse and assess the potential need to pursue stronger synergies between the EU space activities. The proposal for the Regulation[40] was issued by the Commission in 2018 and was the result of the Commission's work initiated by the Space Strategy for Europe.

The legal basis of the Regulation is Article 189 paragraph 2 TFEU. As previously mentioned, the possibility of establishing the European space programme was anticipated by this article. The Programme thus represents the implementation of the EU primary law provision into specific legislation but not only that. Before the adoption of the Regulation, every EU space activity or policy was located in separate legislation.[41] The Regulation eliminates this fragmentation and significantly streamlines the existing laws by combining them in a single text and harmonising almost all rules[42] concerning EU space activities in one place. Furthermore, it gave the EU space endeavours a more solid legal background in framework of EU law. For example, previous legislation regulating Galileo or EGNOS was based on Article 172 TFEU which deals with the Trans-European network. These programmes were developed prior to the introduction of the space competence, so it is not surprising that the legislator had to find the legal basis for their regulations in the existing provisions of EU law. However, after Article 189 was added it was no longer necessary to look for any other provisions which would give the reasoning for such legislation as this article provided the legitimate cause for the adoption of such regulation. Article 189 was introduced especially for further development of the EU space

[38] *Council conclusions on "A Space Strategy for Europe"*. 30 May 2017, Available at: https://data.consilium.europa.eu/doc/document/ST-9817-2017-INIT/en/pdf.
[39] *European Parliament resolution on a Space Strategy for Europe*. 12 September 2017, Available at: https://www.europarl.europa.eu/doceo/document/TA-8-2017-0323_EN.html
[40] *COM (2018) 447 final*. 6 June 2018, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM%3A2018%3A447%3AFIN
[41] See e.g., Regulation (EU) No 1285/2013 of the European Parliament and of the Council on the implementation and exploitation of the European satellite navigation systems, Galileo and EGNOS, or Regulation (EU) No 912/2010 of the European Parliament and of the Council setting up the European GNSS Agency.
[42] The EU law concerning space not replaced by the Regulation establishing the Programme and EUSPA are 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, and 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.

activities, so not using it as the legal basis for the Regulation would have been illogical and in direct contradiction with its objectives.

2.1.2. Objectives

As is the case with any project, the proper and clear definition of objectives is one of the essential prerequisites for its success. Any action or initiative taken in this regard should be based on them and should aim at their fulfilment. The Programme is no exception. Its objectives are set out in Article 4 of the Regulation and for the first time, we can find a single list of objectives of the EU's space efforts defined in one place.

The Regulation distinguishes between general and specific objectives.[43] General objectives are common to all components of the Programme and can only be achieved by their joint effort. There are 5 general objectives stated in the Regulation:

a) *to provide or contribute to the provision of high-quality and up-to-date data and services and wherever possible at global level, meeting existing and future needs and able to support the Union's political priorities;*
b) *to maximise the socio-economic benefits;*
c) *to enhance the safety and security of the Union and its Member States;*
d) *to promote the role of the Union as a global actor in the space sector;*
e) *to enhance the safety, security and sustainability of all outer space activities*.[44]

Before the adoption of the Regulation, the general objectives of the EU space endeavours have never been defined or explicitly mentioned in any legally binding document. However, a closer look at the general objectives of the Programme reveals that, for the most part, no significant change in the previously established direction of the EU's space policies has taken place and they merely reflect the positions that the EU has built up over the years of its space endeavours. Whether in support of the EU's political priorities, providing socio-economic benefits or promoting the EU's role as a global actor in space, these objectives already existed within the EU's space policies, as mentioned earlier. However, the Regulation also outlined a set of new objectives dealing with the security and defence of the EU and the Member States. Until this moment, the EU has had no space programme aimed specifically at this sector. Although the need for the EU to have

[43] Article 4, *Regulation establishing the Programme and EUSPA*.
[44] Article 4(1), *Regulation establishing the Programme and EUSPA*.

its own space security and defence capabilities has been identified as early as 2013[45], it was not until the adoption of the Regulation that this was converted into reality. GOVSATCOM component is the first kind of such EU space project but given the current security situation in Europe[46], it is not surprising that it did not remain the only one for long. As the author elaborates more on this subject in subchapter 2.3.5, in March 2023 the EU launched the newest component of the Programme called IRIS² expanding the EU's space security and defence capabilities. It can also be expected that the EU will further continue exploring the possibilities that space offers regarding security issues while aiming for retaining the civilian nature of the Programme.[47]

Specific objectives, on the other hand, are objectives set separately for each area of the Programme. There are 6 specific objectives, of which 4 are linked to the individual components of the Programme and can be achieved only by that component and that component alone. These objectives will be presented in subchapter 2.3 dealing with individual components of the Programme. However, there are 2 objectives which are not linked to any specific component of the Programme. They aim to support an autonomous, secure, and cost-efficient capability to access space[48] and to foster the development of a strong Union space economy[49] in order to strengthen the competitiveness of the EU space industry as well as to ensure certain independence of the EU in space. In the following subchapter, the author will consider the former, in other words, the EU launching policy.

2.1.3. Access to space

Access to space is crucial for any space activity. But access to space alone is not enough. To have any relevant space policy, you need to have capacities for independent and secure access to space. It is therefore essential for the EU to support the development of critical infrastructure and technology that would allow it to procure and aggregate its launching services. Article 5 of the Regulation provides the framework for just that. The Programme declares support for adaptations of space launch systems, including technology development, which are necessary for launching satellites as well as adaptations of the space ground infrastructure, including new developments, which are necessary for the

[45] *European Council Conclusions 217/13*. European Council 19/20 December 2013, Available at: https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/140245.pdf, p. 6.
[46] Russian Federation invaded Ukraine on 24 February 2022, thus disrupting the security situation in Europe.
[47] Recital 2, *Regulation establishing the Programme and EUSPA*.
[48] Article 4(2) point (e), *Regulation establishing the Programme and EUSPA*.
[49] Article 4(2) point (f), *Regulation establishing the Programme and EUSPA*.

implementation of the Programme.[50] These measures are to be taken without prejudice to the activities of the Member States or ESA, as they partly participate in the Programme alongside the EU.

Until the beginning of 2023, Europe had only one launching site from where its space objects could have been launched into outer space.[51] Although owned by the French government, the site is mainly used and financed by ESA.[52] In January 2023, Sweden inaugurated a new launching site aiming to be the first country to send satellites into orbit from the European continent with an estimated date of launch in the first quarter of 2024.[53] And it is not the only one. Portugal, Spain but also non-EU countries such as Norway or the United Kingdom are all vying to be the first to succeed. This race shows not only the determination of given countries but also points out the shortcomings of the Programme regarding access to space. It is not the EU that dominates this field in Europe, but other actors including some Member States. On the one side, the Programme declares support for autonomous access to space, on the other, however, it dedicates no budget to this particular cause.[54] Although it is not the intention of the author to claim that political support does not deserve recognition and did not play any role in this regard, the credit for the opening of new launching sites across Europe cannot go to the EU, but rather to the individual countries.

However, the shortcomings of the autonomous launching policy of the EU do not end there. Not only the EU does not have its launching sites, but it also does not have the rockets that could carry its satellites into orbit. This problem has become serious, especially in the last year and persists to the time of writing this thesis. To launch its satellites into orbit, the EU has always relied on two types of rockets: Ariane 5 developed by France-based ArianeGroup and Russian-built Soyuz rockets.[55] Since Russia's invasion of Ukraine, the second possibility is not an option. Unfortunately for the EU, rockets Ariane 5 are to be retired in the following months and the deployment of its replacement,

[50] Article 5(2), *Regulation establishing the Programme and EUSPA*.
[51] The launching site is situated in the northeast of South America in French Guiana, an overseas department of France.
[52] *Launch site*. ESA [online]. [accessed on and cited 26 Feb. 2023]. Available at: https://www.esa.int/Applications/Telecommunications_Integrated_Applications/Hylas/Launch_site
[53] *Sweden inaugurates new satellite launch site*. France 24 [online]. [accessed on and cited 26 Feb. 2023]. Available at: https://www.france24.com/en/live-news/20230113-sweden-inaugurates-new-satellite-launch-site.
[54] Recital 6, *Regulation establishing the Programme and EUSPA*.
[55] See for example. https://en.wikipedia.org/wiki/List_of_Galileo_satellites

Ariane 6, has been delayed and is expected to start providing commercial deployments next year.[56] To keep its programmes running and to launch new Galileo satellites into orbit, the Commission is planning to turn to the US for its rocket companies to launch these satellites.[57]

In summary, when it comes to the EU's access to space, the author believes that it can hardly be called autonomous. The EU is dependent on almost every aspect regarding launching policy and not only on its European partners but also on other international actors. The author realises that it never was a genuine goal for the EU to build its capacities to launch objects into orbit and that more emphasis is placed on attributes of "secure" and "cost-efficient". Nonetheless, the author considers this to be a missed opportunity for the improvement of the EU's position as an independent space player.

2.1.4. International cooperation

The Programme further aims at promoting the EU's role as a global actor in the space sector, and to this end, the EU cooperates with other strategic space partners. Disregarding ESA's relations with the EU, which will be analysed in chapter 4, the EU also collaborates with other IGOs and entities both inside and outside of the EU in carrying out its space endeavours. This cooperation is twofold: on the one hand, the Commission delegates certain tasks of the Programme to other entities, on the other, the EU enables the third parties to participate in the Programme and benefit from it.

In respect of the former, the Programme entrusts the implementation of tasks[58] related to the Copernicus component to the European Organisation for the Exploitation of Meteorological Satellites ("EUMETSAT") which is an intergovernmental organisation monitoring weather, climate, and the environment from space by operating system of meteorological satellites. EUMETSAT is involved in Copernicus from the very beginning and specifically provides data, products and support services to the Copernicus information services and user communities and is responsible for operating Sentinel satellites dedicated to the Copernicus programme.[59]

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[56] *EU turns to Elon Musk to replace stalled French rocket*. POLITICO [online]. [accessed on and cited 2 Jun. 2023]. Available at: https://www.politico.eu/article/eu-elon-musk-replace-stalled-france-rocket-galileo-satellite/.
[57] Ibid.
[58] Article 32(1) point (a), *Regulation establishing the Programme and EUSPA*.
[59] *Copernicus*. EUMETSAT [online]. [accessed on and cited 3 Mar. 2023], Available at: https://www.eumetsat.int/copernicus.

In respect of the participation of third parties, the Programme is also open to non-Member States and IGOs. The Regulation in Article 7 recognises 3 groups of third countries that can participate in the Programme and one residual group, which are subject to different regimes. Firstly, there are the member states of the European Free Trade Association which are members of the European Economic Area.[60] To them, the Programme is open almost entirely, excluding only the SST subcomponent and GOVSATCOM which is available under the condition of concluding a specific agreement in accordance with Article 218 TFEU.[61] Then there are acceding countries, candidate countries and potential candidate countries[62]. To them, Copernicus, and certain components of SSA are open and the rest of the components only under the condition of concluding a specific agreement in accordance with Article 218 TFEU. Thirdly, there are European Neighbourhood Policy countries[63] to which apply the same rules as for the previous group. And finally, there is the residual group which includes all IGOs and third countries except those mentioned above. To them, the whole Programme is open only under the condition of concluding a specific agreement in accordance with Article 218 TFEU. The exception to this rule are IGOs which have headquarters in the territory of the EU and as such, are considered to be part of the SST subcomponent of the Programme.[64] The policy allowing participation of other entities in the Programme is in accordance with the objectives of the Programme and represents one of the examples of how the EU promotes its role as a global actor in the space sector. By providing the possibility of benefiting from the Programme to other countries, the EU encourages international cooperation and a common approach to global challenges.

2.1.5. Connection to other policies and programmes

The EU space activities are from the beginning closely interconnected with other policies of the EU. Indeed, one of the missions of the Programme is to develop, maintain and operate the necessary infrastructure to support the policies of the EU and the Member

[60] Iceland, Liechtenstein, and Norway
[61] Article 7(2), *Regulation establishing the Programme and EUSPA*.
[62] Candidate countries are Albania, Moldova, the Republic of North Macedonia, Montenegro, Serbia, Turkey, and Ukraine. Potential candidate countries are Bosnia and Herzegovina, Kosovo, and Georgia.
[63] Algeria, Armenia, Azerbaijan, Belarus, Egypt, Georgia, Israel, Jordan, Lebanon, Libya, Republic of Moldova, Morocco, Syria, Palestine, Tunisia, and Ukraine. The cooperation with Belarus has been suspended as of March 2022 due to its support of the Russian Federation's war in Ukraine.
[64] Recital 40, *Regulation establishing the Programme and EUSPA*.

States.[65] It is not only applications and technology that can benefit from space activities but also EU policies and programmes. The operation of the space system directly complements actions taken under many other EU policies, in particular research and innovation policy, security policy, the common agricultural policy or environment policy. Let's take the so-called Green Deal which aims at environmental sustainability and climate neutrality as an example. The Programme, in particular Galileo and EGNOS provide satellite navigation data to applications used in transport making the use of cars, airplanes but also public transportation more efficient. By making transport more efficient, less fuel is consumed, and fewer pollutants are released into the air, which means that vehicle use is more sustainable. Thus, inevitably supporting the objectives of the Green Deal. The Programme can also contribute to the objectives of the European Defence Action Plan or the European Union Global Strategy, where SST and GOVSATCOM enhance the operational effectiveness of security actors and their personal data.

These were merely a few examples of policies supported and driven by the data provided by the components of the Programme. Nevertheless, they illustrate the character of the EU space activities which are mainly focused on improving the EU's benefits for citizens and thus its global position.

The Programme also shares similar objectives with the EU financial programmes, such as Horizon Europe, InvestEU Programme, European Defence Fund and other funds.[66] Their joint interest with the Programme lies mostly in supporting R&D, small and medium-sized companies, or those industry sectors where the relevant fond is applicable and space data can be beneficial. Although the Programme has its financing set out in the Regulation, certain activities can also be eligible for funding provided by these funds.

2.2. Governance

The Programme is governed by the collaboration of several actors among which the responsibilities and tasks are distributed. The most significant of these are the Member States, the Commission, EUSPA and ESA. A smaller part in the governance of the Programme also plays EUMETSAT, whose role was described above as well as other

[65] *Performance information on the European Space Programme and its predecessors under the 2014-2020 MFF, Copernicus, Galileo and EGNOS*. 7 June 2022 European Commission, Available at: https://commission.europa.eu/system/files/2022-07/ps_db2023_space_h1_1.pdf, p. 2.
[66] Recital 15, *Regulation establishing the Programme and EUSPA*.

institutions, mostly agencies of the EU, such as the European Environment Agency, European Union Satellite Centre ("SATCEN") and others.[67] It is already apparent from this simple outline that the structure of the Programme's governance is quite complex. This is somewhat typical for the EU in other sectors as well and is often the subject of criticism. Therefore, in this subchapter, the author looks at the key actors in the Programme's governance and tries to resolve whether this criticism is justified.

2.2.1. Member States

Although, the Programme envisages the role of the Member States in the governance, not every Member State participates in its implementation equally, and the reason is simple. The contribution of the Member States to the Programme consists mainly in providing technical competence, know-how, systems, and infrastructure in their possession or located on their territory[68] and since the Member States have taken different approaches regarding their space activities over the years, hence their differences. Some have developed more sophisticated capabilities which they can provide, some less. Take France, for example. As the owner of still the only operational European launching site its participation in the implementation of the Programme is greater than perhaps those of the other Member States. Furthermore, the Commission and EUSPA may entrust the Member States with non-regulatory tasks.[69] The involvement of the Member States is, therefore, mostly material and supplementary but nevertheless very important. Without them, the Programme would lack the means for realisation, and thus the point.

2.2.2. European Commission

The Commission play a crucial role in the governance of the Programme. It not only has overall responsibility for the implementation of the Programme[70] but is also responsible for the clear division of tasks between the various entities involved in the Programme.[71] Furthermore, the Commission as the only EU institution empowered to initiate EU legal acts can regulate and amend the Programme through legislative proposals and policies. Leading this effort on behalf of the Commission is the Commissioner for Internal Market and the Directorate-General for Defence Industry and Space.

[67] Article 32(1) point (b), *Regulation establishing the Programme and EUSPA*.
[68] Article 27(1), *Regulation establishing the Programme and EUSPA*.
[69] Recital 43, *Regulation establishing the Programme and EUSPA*.
[70] Article 28(1), *Regulation establishing the Programme and EUSPA*.
[71] Article 28(3), *Regulation establishing the Programme and EUSPA*.

The Commission is also responsible for ensuring the coherence of activities performed in the context of the Programme, meaning oversight not only in relation to other actors but also with respect to the space competence of the EU itself.[72] As previously mentioned, the EU space competence is the so-called parallel competence according to Article 4 paragraph 3 TFEU, and as such its exercise by the EU does not result in the Member States being prevented from exercising theirs. The Commission should therefore cooperate closely with other actors involved in the Programme to ensure conformity of their activities with EU law. As a means of oversight, the Commission should also carry out evaluations of the Programme, regarding the implementation as well as EUSPA's performance of its tasks.[73] The first evaluation is due by 30 June 2024 and every 4 years thereafter. Besides regulatory and oversight roles, the Commission also manages components of the Programme not entrusted to another entity, in particular GOVSATCOM[74] or Copernicus.[75]

To sum up the Commission's role, it is the highest, the most influential body, with the broadest competences in the governance of the Programme and can be considered as in charge of the Programme as a whole.

2.2.3. The European Union Agency for the Space Programme

EUSPA was officially established on 12 May 2021 when the Regulation came into effect. It replaced and succeeded GSA which existed from 2004, firstly as GNSS Supervisory Authority, then was reorganised into GNSS Agency in 2010 and is based in Prague since 2012. GSA was initially responsible for managing and monitoring the use of Galileo and any matters related to this component. With the adoption of the Programme, GSA was formally transformed into EUSPA.

EUSPA is the body of the EU with its own legal personality and in each of the Member States, it is to enjoy the most extensive legal capacity accorded to legal persons under the respective national law.[76] Its administrative and management structure comprises of the Administrative Board, the Executive Director and the Security Accreditation Board which are to ensure the agency's operation within the provided framework.

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[72] Recital 44, *Regulation establishing the Programme and EUSPA*.
[73] Article 102, *Regulation establishing the Programme and EUSPA*.
[74] Article 28(2), *Regulation establishing the Programme and EUSPA*.
[75] *About Copernicus*. Copernicus [online]. [accessed on and cited 5 Mar. 2023], Available at: https://www.copernicus.eu/en/about-copernicus/copernicus-detail.
[76] Article 70, *Regulation establishing the Programme and EUSPA.*

One of the reasons for adopting the Regulation was to consolidate and streamline existing space governance. To this end, EUSPA has been equipped with tasks concerning all components of the Programme which can be divided into two categories: those that are its own and those entrusted to EUSPA by the Commission. With respect to tasks own to EUSPA, its main contribution lies in ensuring the security of the Programme, in communication, market development, and promotion of activities offered by Galileo, EGNOS, and Copernicus or in providing expertise to the Commission.[77] With respect to tasks entrusted to EUSPA by the Commission, it is responsible for managing the exploitation of Galileo and EGNOS, coordinating the user-related aspects of GOVSATCOM, or development of downstream markets and fostering innovation based on Galileo, EGNOS, and Copernicus.[78] As of July 2023, EUSPA will also take the responsibility for SST Front Desk operations service and soon also for IRIS².[79]

This list of tasks is not exhaustive, and the Commission may entrust other tasks to EUSPA, provided that they do not duplicate activities performed by other entities and aim to improve the efficiency of the implementation of the Programme.

EUSPA's role in the governance of the Programme is primarily operational. Through day-to-day managing, monitoring, and undertaking of its tasks, it contributes to the implementation of the Programme, and thus to the achievement of its objectives.

2.2.4. European Space Agency

Although ESA is not an EU body and is not subjected to EU law, it participates in and contributes to the realisation of the Programme with its extensive expertise in space. Initially, ESA's involvement in the EU space activities was far more significant than it is now. After all, Galileo was developed with equal cooperation of ESA and the EU and without technical and material input from ESA it would hardly exist. Gradually, however, the EU took over most of the operations and ESA became more or less a minority partner in the space projects of the EU.[80] This is reflected in the tasks entrusted to ESA by the Programme. Based on the relationship built with the EU, which will be analysed in chapter 4, ESA is entrusted with R&D tasks regarding mostly Copernicus but also Galileo

[77] Article 29(1), *Regulation establishing the Programme and EUSPA*.
[78] Article 29(2), *Regulation establishing the Programme and EUSPA*.
[79] *About EUSPA*. EUSPA [online]. [accessed on and cited 5 Mar. 2023], Available at: https://www.euspa.europa.eu/about/about-euspa#missionstatement.
[80] VON DER DUNK, Frans G., *The European Union and the Outer Space Treaty: Will the Twain Ever Meet?*. p. 80.

and EGNOS.[81] Like EUSPA, ESA may also be entrusted with other tasks by the Commission, provided that they do not duplicate activities performed by other entities and aim to improve the efficiency of the implementation of the Programme.

Looking back at the Regulation's intention to streamline the governance of the EU space endeavours, the author cannot shake the feeling that it is still far too complex, and not only for the uninitiated. Although the Regulation provides in one place a relatively clear distribution of tasks, which is an unquestionable benefit, they remain seriously fragmented among various entities involved in the Programme. The complexity and bureaucracy of relations among them could potentially make responding to urgent problems inefficient and slow in comparison with other international actors. However, when we realistically look at the EU, its structure, and the Programme itself, it seems that at least at this moment, this complexity is unavoidable.

2.3. Components of the Programme

In this chapter, the author takes a look at the individual components of the Programme and briefly discusses the most important facts, such as background, description of services, regulatory framework as well as other significant aspects which will provide a better understanding of the EU's space activities, its objectives and position in the international space structure.

2.3.1. Galileo and EGNOS

Satellite navigation was the area where the EU space activities began to materialise, not only in terms of policies and legislation but also in terms of the development of its own space infrastructure. As far back as the 1990s, the EU saw the need for Europe to have its own GNSS.[82] The decision to develop an autonomous European GNSS was taken after the plan to create a new GNSS which would be built upon American GPS and Russian GLONASS had failed. Therefore, the EU took it upon itself and with close cooperation with ESA established the first ever European programme in outer space called EGNOS. The development of EGNOS started in 1999 and was designed to be Europe's satellite-based augmentation system, that is used to improve the performance of GNSS. EGNOS

[81] Article 30(1), *Regulation establishing the Programme and EUSPA*.
[82] See. *supra n. 23.*

started its initial operation in 2005 and the official launch of services was announced in 2009.[83]

However, at the time of the development of EGNOS, Europe did not have its own GNSS and since services provided by EGNOS were focused solely on augmenting inputs from GNSS, it was highly dependent on the cooperation with other GNSS, especially with the US-operated GPS.[84] The reason for the EU not wanting to be dependent on the existing GNSS was based on two interconnected premises. The first was their military nature. GPS, and GLONASS, as well as other GNSS were originally launched as military projects and, although they later started to provide civilian services, they are controlled and operated by the defence forces. This was in stark contradiction with the EU's intention to use its space capacities for civilian purposes under civilian governance.[85] The second concern is based on a similar issue. As the GNSS were operated by foreign, although mostly allied countries, there was the risk that in the case of tension arising between the EU and the respective operator of GNSS, access of the EU to GNSS could potentially be restricted, disrupting several industries throughout the EU. Thus, at the turn of the millennium, the EU decided[86] that the best course of action for the achievement of its objectives would be to develop its own, civilian GNSS called Galileo.

The first stage of Galileo was the so-called Definition phase launched in 1999 and the In-Orbit Validation phase launched in 2003. These stages aimed to prepare and develop the necessary background of the programme which resulted in launching of the first two experimental satellites into orbit in 2005 and then later in 2008. After the first stages were declared completed, Galileo continued with the Initial Operational Capability phase in 2011. This stage represented the partial commissioning of the ground and space infrastructure of Galileo, ultimately leading to the provision of Galileo Initial Services in December 2016.[87] From this moment, although only limited, Galileo started to provide

[83] *EGNOS 'Open Service' available: a new era for European navigation begins today*. ESA [online]. [accessed on and cited 9 Mar. 2023], Available at: https://www.esa.int/Applications/Navigation/EGNOS_Open_Service_available_a_new_era_for_European_navigation_begins_today.
[84] VON DER DUNK, Frans G., TRONCHETTI, Fabio, *Handbook of Space Law*, p. 260.
[85] See. *Council Resolution on the European Contribution to the Development of a Global Navigation Satellite System* where the civil nature of European GNSS is emphasised in multiple places.
[86] *Council Resolution on the involvement of Europe in a new generation of satellite navigation services – Galileo – Definition Phase*. 19 July 1999, Available at: https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:1999:221:0001:0003:EN:PDF.
[87] *Galileo goes live!*. European Commission [online]. [accessed on and cited 9 Mar. 2023], Available at: https://ec.europa.eu/commission/presscorner/detail/en/IP_16_4366.

its services. The full Operational Capability phase which is the final stage consisting of the deployment of the full system of 30 satellites has not yet been reached. At the point of writing, 28 out of 30 satellites were launched into orbit[88] and it is expected that the last two satellites will be deployed in January 2024.[89]

The specific objective of Galileo and EGNOS according to the Regulation is *"to provide long-term, state-of-the-art and secure positioning, navigation and timing services whilst ensuring service continuity and robustness."*[90] To this end, the Regulation provides Galileo and EGNOS with necessary services. These are, along with other provisions regulating GALILEO and EGNOS, stated in the Title VI of the Regulation. Galileo provides a total of 9 services, out of which 6 are its own and 3 are a contribution to other programmes.[91] Services provided by Galileo are Galileo open service (GOS), high accuracy service (HAS), signal authentication service (SAS), public regulated service (PRS), emergency service (ES) and timing service (TS). Most of these services are free of charge and available for enabled users, excluding SAS which is intended mainly for satellite navigation applications for professionals and commercial use, and PRS which is restricted to government-authorised users for sensitive applications. As to the regard of Galileo's contribution to other programmes, perhaps the most significant is the search and rescue support service to the international satellite system for search and rescue called COSPAS-SARSAT.

EGNOS provides 3 services.[92] These are EGNOS open service, EGNOS data access service and safety-of-life service. All of them are free of direct user charges and are intended either for consumers, for professional or commercial use or specific business sectors such as civil aviation. EGNOS services are inseparably connected with Galileo or other GNSS and its services aim to improve the performance of these GNSS.

Last but not least, Galileo and EGNOS are also compatible and interoperable with other GNSS. This is quite unique and is mostly made possible because of their civilian nature.

[88] *Galileo satellites 27-28 reach final orbit; initiate testing phase*. European GNSS Service Centre [online]. [accessed on and cited 9 Mar. 2023], Available at: https://www.gsc-europa.eu/news/galileo-satellites-27-28-reach-final-orbit-initiate-testing-phase.
[89] See https://nextspaceflight.com/launches/details/1930.
[90] Article 4(2) point(a), *Regulation establishing the Programme and EUSPA*.
[91] Article 45, *Regulation establishing the Programme and EUSPA*.
[92] Article 46, *Regulation establishing the Programme and EUSPA*.

By cooperating with other GNSS, Galileo and EGNOS can provide the most accurate services and thus comparative advantages for the EU.

2.3.2. Copernicus

In the late 1990s and early 2000s, the EU and ESA started to cooperate on another joint space project: Global Monitoring for the Environment and Security (GMES). GMES, today under the name of Copernicus, is a European Earth observation programme that monitors the planet and collects and provides environmental data to its users which are subsequently used in a multitude of areas, such as agriculture, climate change or security.

The first discussions about the need to develop GMES were held in 1998 by representatives of the EU and ESA. There the concepts of the programme were drawn up in the form of the so-called Baveno Manifesto.[93] Subsequently, in 2001 the EU made the official political declaration for the launch of the initial period of GMES.[94] GMES provided the first pre-operational services in 2008 and the initial operation started in 2011. It was only around that time when the first formal EU legislation on GMES was adopted.[95] After that, GMES was re-branded to Copernicus in 2012 and became fully operational in 2014.

The specific objective of Copernicus is *"to deliver accurate and reliable Earth observation data, information and services integrating other data sources, supplied on a long-term sustainable basis, to support the formulation, implementation and monitoring of the Union and its Member States' policies and actions based on user requirements."*[96] Title VII of the Regulation provides the framework and equipment for Copernicus to achieve this objective. It defines the scope of the component, acquisition of data, its processing and distribution. The vast majority of data/information delivered by Copernicus, with certain limitations,[97] is made available and accessible to anyone around the world on a free, full, and open basis. It also states areas in which Copernicus services

[93] *A short history of the Copernicus In Situ Component since the Baveno Manifesto*. Copernicus [online]. [accessed on and cited 10 Mar. 2023], Available at: https://insitu.copernicus.eu/news/the-copernicus-in-situ-component-since-the-baveno-manifesto.
[94] *Council Resolution on the launch of the initial period of global monitoring for environment and* security. 13 November 2001, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2001.350.01.0004.01.ENG.
[95] *Regulation of the European Parliament and of the Council on the European Earth monitoring programme and its initial operations (2011 to 2013), No. 911/2010/EU*. 22 September 2010, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32010R0911
[96] Article 4(2) point(b), *Regulation establishing the Programme and EUSPA*.
[97] Article 53(1) point (b), *Regulation establishing the Programme and EUSPA*.

are applicable, such as environmental monitoring of atmosphere, marine, land and climate change, but also emergency management or security.[98]

The Copernicus programme is served by a set of dedicated satellites, called Sentinels. Currently, there are 7 Sentinel satellites in orbit. The complete constellation of 20 satellites is expected to be in orbit before 2030.[99]

2.3.3. SSA

Another component of the Programme is Space Situational Awareness (SSA). SSA provides the EU with the necessary capability to protect critical infrastructure in space and from space. It is generally understood that SSA covers three main areas, namely Space Surveillance and Tracking (SST), Space Weather (SWE), and Near-Earth Objects (NEO). These are also sub-components of the Programme and together they form SSA which is mostly only a general term.

The EU recognised the need to develop capabilities for the monitoring and surveillance of its space infrastructure and space debris in 2008.[100] Especially space debris has become a serious threat to the security, safety and sustainability of space activities and the EU needed to address this issue. In the following years, the EU reiterated this intention through various political declarations[101] until 2014 when the SST project of the EU was established, aiming to provide support of the EU for the existing capabilities of the Member States. Although the SST Decision[102] covered only the area of SST, it also emphasized the need for synergies across other areas of SSA which became part of the EU's SSA activities with the adoption of the Regulation and where to that point provided to the EU solely by other space actors.

Provisions regulating the SSA component of the Programme are contained in Title VIII of the Regulation entitled *"Other Components of the Programme"* alongside with the

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[98] Article 51(1), *Regulation establishing the Programme and EUSPA*.
[99] See. *supra n. 75.*
[100] *Council Resolution 'Taking forward the European Space Policy' (2008/C 268/01)*. 26 September 2008, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.C_.2008.268.01.0001.01.ENG&toc=OJ%3AC%3A2008%3A268%3ATOC.
[101] See e.g., *7th Space Council resolution: "Global challenges: taking full benefit of European space systems"*. 25 November 2010, Available at: https://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/intm/118012.pdf.
[102] *Decision No 541/2014/EU of the European Parliament and of the Council establishing a Framework for Space Surveillance and Tracking Support*. 16 April 2014, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32014D0541#ntr3-L_2014158EN.01022701-E0003.

GOVSATCOM component. Meanwhile, Galileo and EGNOS, and Copernicus had titles dedicated only to them, the incorporation of SSA and GOVSATCOM into one title gives the impression that these components are only supplementary and less important parts of the Programme. This impression may not be completely incorrect. When we look at the financial aspect, the funding of €0,442 billion[103] allocated to these components from the Programme budget is significantly lower than the funding allocated to Galileo and EGNOS, and Copernicus and represents only a fraction of the total budget. In addition, Galileo and EGNOS, and Copernicus are very often labelled as European space flagships projects[104] whilst both SSA and GOVSATCOM are relatively young and less developed in comparison with them. Nevertheless, their potential impact and benefit for the EU are not negligible.

The specific objective of SSA is *"to enhance capabilities to monitor, track and identify space objects and space debris with the aim of further increasing the performance and autonomy of capabilities under the SST sub-component at Union level, to provide SWE services and to map and network Member States' capacities under the NEO sub-component."*[105] Looking at the definition of the specific objective, it is clear that the SST sub-component is a central part of SSA. Its main purpose lies in mitigating the risk of a collision between the space assets of the EU, especially the satellites involved in the Programme, but also assets of the Member States or different space operators with other spacecraft and debris. SST also assesses the risk of an uncontrolled re-entry of artificial space objects into the Earth's atmosphere or detects in-orbit fragmentations, break-ups, or collisions. It uses a network of ground-based sensors capable of surveying and tracking artificial space objects and provides data about them.

Regarding SST users, there are 2 groups of users. On the one hand, some have access to all SST services. These are called core users and consist of the Member States, certain bodies of the EU as well as public and private spacecraft owners and operators established in the EU. On the other hand, there are non-core users where are included other public and private entities established in the EU. With the exception of risk assessment of the

[103] Article 11(1) point(c), *Regulation establishing the Programme and EUSPA*.
[104] VON DER DUNK, Frans G., TRONCHETTI, Fabio, *Handbook of Space Law*, p. 258, 262.
[105] Article 4(2) point(c), *Regulation establishing the Programme and EUSPA*.

collision, all SST services are open to them. There is also a group of international SST users, but they have very limited access to SST.[106]

Finally, the SST sub-component is also relying on the assets of the Member States. Those that wish to participate in the provision of SST services can conclude a so-called SST partnership agreement with the Commission and network their national assets in the SST capability. In the provision of SST services currently participates 15 Member States.[107]

With the adoption of the Regulation, SWE and NEO sub-components were included in the EU SSA component. SWE provides services connected to weather monitoring and forecast, while NEO is dedicated to preventing the collision of asteroids, whose orbit brings them close to Earth, with Earth. These activities are executed in close cooperation with ESA where already a significant know-how and experience in this field has been built up.[108]

2.3.4. GOVSATCOM

Governmental Satellite Communications or otherwise known as GOVSATCOM aims at providing secure communications capabilities to security and safety-critical missions and operations managed by the EU and the Member States. It is the first major space project of the EU with a strong security dimension and is expected to contribute to the EU's response to specific threats, including terrorism or migration.

Preparation for the establishment of GOVSATCOM was officially announced in 2013 by the European Council.[109] GOVSATCOM was also identified as one of the elements of the EU's foreign and security policy in 2016[110] or by the Commission in 2017.[111] These political declarations were materialised with the adoption of the Regulation.

GOVSATCOM was established by the Regulation and is currently in the first phase of its development which should last approximately until 2025.[112] Since the whole Programme

[106] Article 56(2), *Regulation establishing the Programme and EUSPA*.
[107] *New EU SST Partnership of 15 Member States signed.* EUSST [online]. [accessed on and cited 11 Mar. 2023], Available at: https://www.eusst.eu/newsroom/new-eu-sst-partnership-signed/.
[108] *Space Safety*. Belspo: The Federal Science Policy Office [online]. [accessed on and cited 11 Mar. 2023], Available at: https://www.belspo.be/belspo/space/esa_spaceSafety_en.stm.
[109] See. *supra n. 45.*
[110] *Global Strategy for the EU's Foreign and Security Policy*. High Representative of the Union for Foreign Affairs and Security Policy June 2016. Available at: https://www.eeas.europa.eu/sites/default/files/eugs_review_web_0.pdf.
[111] *White Paper on the future of Europe: Reflections and scenarios for the EU27 by 2025 (COM (2017) 2025 final).* European Commission 1 March 2017. Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2017:2025:FIN.
[112] Recital 104, *Regulation establishing the Programme and EUSPA*.

was established for the period 2021-2027, it is quite likely that the next stage will be achieved in the following MFF. The specific objective of GOVSATCOM corresponds with this, stating it is *"to ensure the long-term availability of reliable, secure and cost-effective satellite communications services for GOVSATCOM users."*[113] Unlike other components of the Programme, GOVSATCOM is not aiming to "provide", "deliver", or even "enhance" its services. It is to ensure the availability of GOVSATCOM services, firstly by procuring existing capacities of the Member States that could be used in GOVSATCOM and combine them into a common pool, secondly by introducing an approach for the provision of GOVSATCOM services, and by developing additional infrastructure.

There are 3 main areas where GOVSATCOM services should apply.[114] First is crisis management, which may include certain civilian and military missions and operations, but also natural and man-made disasters or humanitarian crises. Then there is surveillance such as border and maritime surveillance, or surveillance of illegal trafficking. Finally, for the security of key infrastructures including EU space assets such as Galileo and EGNOS.

Once operational, GOVSATCOM services will be provided free of charge, unless the Commission defines a pricing policy[115] and will be available only to the EU's or the Member State's public authorities, and natural or legal persons acting on behalf of and under the control of said authority. They will have to be authorised by the so-called GOVSATCOM participants[116] which will be labelled as such insofar as they authorise GOVSATCOM users or provide infrastructure for the provision of GOVSATCOM services.

2.3.5. IRIS²

On 15 March 2023, the Parliament, by adopting Regulation (EU) 2023/588,[117] (hereafter the "Regulation on IRIS²") completed the establishment of the newest component of the

[113] Article 4(2) point(d), *Regulation establishing the Programme and EUSPA*.
[114] Recital 100, *Regulation establishing the Programme and EUSPA*.
[115] Article 63(1), *Regulation establishing the Programme and EUSPA*.
[116] Article 68, *Regulation establishing the Programme and EUSPA*.
[117] *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* (hereafter Regulation on IRIS²). 15 March 2023, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2023.079.01.0001.01.ENG&toc=OJ%3AL%3A2023%3A079%3ATOC.

Programme. Infrastructure for Resilience, Interconnectivity and Security by Satellite (IRIS²) is the EU's space-based secure connectivity programme and aims at offering enhanced communication capacities to both civil and governmental users. It is therefore closely interconnected with GOVSATCOM and together they represent a new era of the EU space activities that will bring into life direct involvement of the EU's space capabilities in defence and security policies of the EU, whilst maintaining its civilian nature.

IRIS² has been a crucial part of the EU space defence policy ever since the EU recognised the benefits that space can provide for its defence and security. However, until 2022, this initiative existed only in the conclusions of the Council[118] or the communications of the Commission.[119] This dramatically changed with the unprecedented invasion of Ukraine by Russian Federation. The return of war to Europe shook the whole continent and opened the most essential security questions. It also accelerated the EU's resolve to become more involved and thus more independent in ensuring its security. Coincidentally, the EU had also been working on a long-term strategic document, the so-called "Strategic Compass for Security and Defence"[120] aiming at strengthening its security and defence policy by 2030 at that time. It was in this document that the Council pledged to prepare the proposal for a space-based global secure communication system – the task which has already been partly implemented by GOVSATCOM and was now being supplemented by IRIS².

The Regulation on IRIS² is inherently connected with the Regulation. Although providing its framework on implementation, objectives and even budget, it expressly takes into account the provisions of the Regulation[121] and refers to the Regulation on several occasions. The adoption of the Regulation on IRIS² therefore, in the author's opinion, does not necessarily undermine the initial idea of the Regulation, which was to consolidate the EU space legislation but rather complements it. Nevertheless, IRIS² has been adopted for the period of 2023-2027 and therefore can be expected to be included in any future incarnation of the Programme after 2027.

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[118] *European Council Conclusions 1/19.* European Council 21/22 March 2019, Available at: https://data.consilium.europa.eu/doc/document/ST-1-2019-INIT/en/pdf.
[119] *Action Plan on synergies between civil, defence and space industries COM(2021) 70 final*. European Commission 22 February 2021, Available at: https://commission.europa.eu/system/files/2021-03/action_plan_on_synergies_en_1.pdf.
[120] *A Strategic Compass for Security and Defence* 7371/22. Council of the European Union 21 March 2022, Available at: https://data.consilium.europa.eu/doc/document/ST-7371-2022-INIT/en/pdf.
[121] Article 1, *Regulation on IRIS².*

The main objectives of IRIS² are (i) to ensure the long-term availability of reliable, secure and cost-effective satellite communications services at a global scale, and (ii) to allow further development of high-speed broadband and seamless connectivity throughout the EU, removing communication dead zones and thus increasing cohesion between the Member States.[122] IRIS² will have various options for governmental applications, such as border surveillance or secure communications between governmental users but also for commercial applications, such as mobile and fixed broadband satellite access or cloud-based services (services similar to those offered by the company SpaceX in the programme Starlink). For these purposes, the EU plans to develop both space and ground infrastructure, with the ambitious aim to launch initial services of IRIS² by 2024 and a full operational capability by 2027.[123] IRIS² should thus join GALILEO and Copernicus as the third satellite constellation of the EU.

3. SPACE DIMENSION IN RELATIONS BETWEEN THE EUROPEAN UNION AND THE UNITED NATIONS

As mentioned in the introduction, this chapter is mainly devoted to the analysis of the EU's position on the Outer Space Treaty, the Liability Convention, and the Registration Convention. However, before addressing the EU's position on these space treaties, and comprehending the background to their adoption and the EU's position on them, it is first necessary to briefly reflect on the UN's approach to outer space and the establishment of the relevant UN bodies dealing with space, as well as the EU's involvement in these UN bodies. For the avoidance of doubt, the author disclaims that no effort will be attempted to address these matters in detail and only the most important aspects needed for this thesis will be discussed.

3.1. Status of the European Union in the United Nations' space organs

The UN was founded after the end of World War II in 1945 to maintain international peace, security, and cooperation among nations, to protect human rights, and upholding of international law.[124] To this end, the UN was empowered with the equipment necessary for the achievement of these objectives in various areas, including institutions responsible for carrying out these tasks. The UN has 6 principal organs. The most important of these

[122] Article 3(1), *Regulation on IRIS².*
[123] Recital 13, *Regulation on IRIS².*
[124] Article 1, *Charter of the United Nations*. San Francisco, signed on 26 June 1945 and entered into force on 24 October 1945, 1 UNTS XVI. Available at: https://treaties.un.org/doc/publication/ctc/uncharter.pdf.

for space activities is the General Assembly. It is the main deliberative, policymaking, and representative body of the UN, composed of all UN member states meeting in regular yearly sessions. The sessions of the General Assembly are also open for invited intergovernmental organisations which may participate as observers. The EU is one of these organisations since 1974 when it has been granted the status of permanent observer.[125] In addition, it has had enhanced participation rights since 2011,[126] providing the EU with a prominent position within the group of observers of the General Assembly.

The General Assembly establishes numerous subsidiary organs to assist in its broad mandate. They are divided into 5 categories, each of them focusing on different aspects of the UN agenda. Some were established right at the beginning, others later on when the need for their existence arose. The launching of the first-ever artificial satellite into orbit by the Soviet Union in 1957 was definitely one of these situations. This unprecedented achievement raised the concern of using outer space for military purposes and therefore needed to be addressed by the UN. Thus in 1958, the General Assembly created an ad hoc Committee on the Peaceful Uses of Outer Space ("COPUOS")[127] which was established as a permanent body of the UN in 1959.[128] The main task of COPUOS is to review and foster international cooperation in the peaceful uses of outer space, as well as to consider legal issues arising from the exploration of outer space. In pursuit of these goals, COPOUS is assisted by the UN Office for Outer Space Affairs ("UNOOSA").

Although COPOUS was established in the late 1950s and the EU is to a certain extent engaged in space activities since the 1980s, it was only in 2018 when the EU applied and was granted the status of permanent observer in COPOUS.[129] Until that moment the EU attended the meetings of COPOUS only as an ad hoc observer. In the application, the EU reiterated its interest in the peaceful use of outer space and affirmed its commitment to multilateralism with a strong and effective UN at its core to which it wants to contribute. The EU position in COPOUS is mostly represented by the Commission which coordinates

[125] *EU at the UN General Assembly.* Consilium.europa.eu [online]. [accessed on and cited 3 Mar. 2023]. Available at: https://www.consilium.europa.eu/en/policies/unga/

[126] *Resolution adopted by the General Assembly on 3 May 2011*. Resolution adopted by the General Assembly on 3 May 2011. dated 10 May 2011, UN Doc A/RES/65/276, UN Doc A/RES/65/276.

[127] *Resolution adopted by the General Assembly on 13 December 1958.* UN Doc RES 1348 (XIII). Available at: https://www.unoosa.org/pdf/gares/ARES_13_1348E.pdf.

[128] *Resolution adopted by the General Assembly on 12 December 1959.* UN Doc RES 1472 (XIV). Available at: https://www.unoosa.org/pdf/gares/ARES_14_1472E.pdf.

[129] *Report of the Committee on the Peaceful Uses of Outer Space.* dated 20-29 June 2018, UN Doc A/73/20. Available at: https://documents-dds-ny.un.org/doc/UNDOC/GEN/V18/047/48/PDF/V1804748.pdf?OpenElement.

the activities on the international scene and defends the interest of the EU and its Member States in matters of the Programme, without prejudice to Member States' competence in that area.[130] Through activities like this, the EU also perform its space diplomacy, advocating cooperation on an international level, and peaceful use of outer space.[131]

With increasing developments in outer space exploitation, the UN realised that to secure peaceful use of outer space, only declarations and resolutions drafted by COPOUS, although with considerable political and moral force, but with no binding legal character, would not suffice. Thus, the most essential treaty that forms the basis of international space law as we know it today was born.

3.2. The Outer Space Treaty

Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies by the full name, but mostly referred to as the Outer Space Treaty, was the first multilateral treaty governing aspects of international space law. Signed in 1967, it provides general limitations on the conduct of outer space activities. It is also the biggest international space law treaty with 113 contracting parties as of June 2023.[132]

The Outer Space Treaty constitutes the core principles of international space law. These are rather broad and general, providing obligations, such as to explore and use outer space for the benefit of all countries[133], to act in accordance with international law[134], to desist from the stationing of weapons of mass destruction in outer space[135], or to accept international responsibility and liability for its space activities.[136] Based on this general nature, wide acceptance and length of its undisputed existence, it is generally regarded

[130] Recital 12, *Regulation establishing the Programme and EUSPA*.
[131] *EU Statement*. 76th UN General Assembly, Fourth Committee, Agenda item 53: International cooperation in the peaceful uses of outer space United Nations, New York, October 2021. Available at: https://www.un.org/en/ga/fourth/76/pdf/EU_en_item_53.pdf.
[132] See for the most recent status, https://treaties.unoda.org/t/outer_space.
[133] Article I, *Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies* (hereafter Outer Space Treaty). London/Moscow/Washington, signed on 27 January 19667 and entered into force on 10 October 1967. RES 2222 (XXI). Available at: https://www.unoosa.org/pdf/gares/ARES_21_2222E.pdf.
[134] Article III, *Outer Space Treaty*.
[135] Article IV, *Outer Space Treaty*.
[136] Article VI and VII, *Outer Space Treaty*.

that the substantial principles codified in the Outer Space Treaty are also rules of customary international law.[137]

3.2.1. Position of the European Union

The EU is not a party to the Outer Space Treaty. However, it is not so because of its political decision or lack of interest but rather because the Outer Space Treaty does not provide the possibility for any IGO to act as a party to the treaty. This is not to say that if the EU had the opportunity to become, even if only, a de facto party to the Outer Space Treaty that it would do so. In fact, the reality would tell us otherwise. Not only has the EU not used the opportunity to become a party to other UN space treaties where this is enabled, as will be shown below, it also does not consider itself an "ordinary" IGO but rather a supranational entity which, in terms of competencies and integration, exceeds other IGOs.[138] However, there are few references in the Outer Space Treaty to IGOs[139] which suggests that its creators did not want to accord any special status to IGOs and saw them mostly as platforms for cooperation rather than independent legal entities. Therefore, responsibility for activities in outer space taken by or within the IGO is to be borne not only by the organisation itself but also by states participating in such organisation.

Despite the lack of a direct connection between the EU and the Outer Space Treaty, the EU still have a certain connection with the Outer Space Treaty, mainly in its role as a legislator of space law.

The first aspect of the EU and the Outer Space Treaty relationship stems from the position of the Member States on the treaty. As of June 2023, Latvia remains the only Member State which is not party to the Outer Space Treaty. This means, that in accordance with the legal principle *pacta sunt servanda*, the Member States which are parties to the Outer Space Treaty are bound to abide by the treaty and its provisions. One of the obligations of parties under the Outer Space Treaty is to carry out activities in the exploration and use of outer space in conformity with international law,[140] including space legal

[137] JAKHU, Ram S., FREELAND, Steven, *The Relationship between the Outer Space Treaty and Customary International Law*. In: SSRN Electronic Journal, 2016. p. 3. Available at: https://www.researchgate.net/publication/334035756_The_Relationship_Between_the_Outer_Space_Treaty_and_Customary_International_Law.
[138] TOMÁŠEK, Michal, TÝČ, Vladimír, PETRLÍK David, et al. *Právo Evropské Unie.* 3rd Edition. Prague: Leges 2021, p. 117. ISBN: 978-80-7502-491-6.
[139] Article VI and XIII, *Outer Space Treaty*.
[140] Article III, *Outer Space Treaty*.

regulations they enact or that are applicable to their territory. As previously mentioned, the EU has the legislative capacity to pass regulations directly applicable on the territory of the Member States in the area of competences fully or partly delegated to the EU. Since the space competence under Article 189, TFEU falls within this area, legislation regarding space activities enacted by the EU is directly applicable to the Member States and as such must comply with the Outer Space Treaty in at least 26 out of 27 Member States which are bound to ensure that the EU space legislation does so and given their large majority are also bound to succeed. This means that even though the EU is not a party to the Outer Space Treaty, its provisions have been indirectly translated into the legislation of the EU through the influence of the Member States. Therefore, it can be said that EU space legislation, including the Regulation, is so far in compliance with the Outer Space Treaty, and it is not likely to change in the future.

The second aspect of the EU relationship with the Outer Space Treaty has already been partly outlined and concerns the perception of the treaty as a customary law. The EU as an international actor recognises its fundamental obligation to comply with international law and its principles.[141] This commitment logically applies not only to the provisions of international law that the EU explicitly accepted but also to those provisions which based on their nature became customary international law.[142]

The most fundamental principles of the Outer Space Treaty are generally considered to be part of customary international law. This has significant implications for those entities which are not parties to the treaty, including the EU even though it is not a state. The Outer Space Treaty regulates the most essential aspects of exploration and use of outer space, and it effectively serves as a constitution of space law, with all subsequent space law being built upon its foundational framework. With no new multilateral space treaty being concluded since 1979, it still plays a major role in human space activities. Therefore, it would not be possible for the EU to conduct its space endeavours without considering the substantial provisions of the Outer Space Treaty and abide by them.

[141] Article 21, *Treaty on European Union* (hereafter TEU). Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A12012M%2FTXT.
[142] See for example, Decision of General Court of the European Union, Kadi v Council and Commission, T-315/01, and Ahmed Ali Yusuf and Barakaat International Foundation v Council and Commission, T-306/01, from 21 September 2005.

3.3. The Liability Convention and the Registration Convention

As already mentioned, the Outer Space Treaty represents the foundation for all of space law. Its provisions are therefore very general and several of them were soon to be seen as requiring elaboration. Thus, the liability concept provided by Article VII of the Outer Space Treaty gave rise to the Liability Convention[143], and obligations stemming from Article VIII of the Outer Space Treaty concerning the registration of objects launched into space were elaborated by the Registration Convention.[144] Based on the same logic, two more multilateral agreements were concluded at that time, the so-called Rescue Agreement and Moon Agreement. However, we are not going to discuss these in this thesis, as their relationship with the EU has rather a negligible impact on its space activities.

The Liability Convention was the result of extensive work that preceded its adoption. Issues concerning liability for damage caused by space objects were raised almost from the very beginning of human space activities.[145] As indicated, the first framework regarding international liability was introduced in the Outer Space Treaty in Article VII. The Liability Convention elaborates this provision but does not depart from its rationale which sets the liability of states for damage caused by space objects[146] that are (i) launched by the given state, (ii) the launching is procured by this state, or (iii) which were launched within their territory or using their facility. It also provides the framework for claim application[147] or joint liability in case two and more states cooperate on the launch[148]. As of June 2023, 98 states were parties to the Liability Convention.[149]

Similarly to the Liability Convention, the roots of the Registration Convention are traced back to the Outer Space Treaty, specifically to Article VIII. The UN General Assembly made the first requests to the states launching space objects into outer space to provide

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[143] *Convention on International Liability for Damage Caused by Space Objects* (hereafter Liability Convention). London/Moscow/Washington, signed on 29 March 1972 and entered into force on 1 September 1972. RES 2777 (XXVI). Available at: https://www.unoosa.org/pdf/gares/ARES_26_2777E.pdf.

[144] *Convention on Registration of Objects Launched into Outer Space* (hereafter Registration Convention). New York, signed on 14 January 1975 and entered into force on 15 September 1976. RES 3235 (XXIX). Available at: https://www.unoosa.org/pdf/gares/ARES_29_3235E.pdf.

[145] *Report of the Ad Hoc Committee on the Peaceful Uses of Outer Space.* New York, 14 July 1959. UN Doc A/4141, Available at: https://documents-dds-ny.un.org/doc/UNDOC/GEN/N59/168/35/PDF/N5916835.pdf?OpenElement.

[146] Article II-IV, *Liability Convention*.

[147] Article VII-XX, *Liability Convention*.

[148] Article V, *Liability Convention*.

[149] See for the most recent status, www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/status/index.html.

the information to COPUOS in 1961.[150] However, no mandatory measures were introduced until 1975 when the Registration Convention was adopted. The Registration Convention extends the scope and practical effect of the Article VIII of the Outer Space Treaty. Following the example of the Liability Convention, it imposes an obligation on precisely defined states[151] to keep a register of all space objects launched into outer space[152] and defines the requirements for such registration.[153] Registration of space objects can contribute to the application and development of international law governing the exploration and use of outer space. As of June 2023, 74 states were parties to the Registration Convention.[154]

3.3.1. Position of the European Union

In contrast to the Outer Space Treaty, both the Liability Convention and the Registration Convention enable IGOs to assume rights and obligations arising from the conventions.[155] By making an official declaration of acceptance of rights and obligations, IGOs can become de facto parties to the conventions. As of June 2023, 4 IGOs made such acceptance.[156] Although some hints of potential acceptance of the rights and obligations from the conventions have been made in the Regulation[157], the EU is not one of them.

As discussed on multiple occasions in this thesis, the EU is involved in space activities not only in terms of its legislative capacities but also as an operator of its space projects. Concerning the Liability Convention and the Registration Convention perhaps the most significant of them are Galileo and Copernicus as they use and operate their own in-orbit satellites. The same applies to all space assets across every EU space activity which was launched into outer space by the EU. Since the EU is not a party to any of the UN space treaties mentioned above but carries out space activities, including launching satellites into space, several questions arise as to what legal regime applies to these satellites, who registered them, and who is liable if they cause damage.

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[150] *Resolution adopted by the General Assembly on 20 December 1961*. UN Doc RES 1721 (XVI). Available at: https://www.unoosa.org/pdf/gares/ARES_16_1721E.pdf.
[151] Article I, *Registration Convention.*
[152] Article II, *Registration Convention.*
[153] Article IV, *Registration Convention.*
[154] See for the most recent status, www.unoosa.org/oosa/en/ourwork/spacelaw/treaties/status/index.html.
[155] Article XXII, *Liability Convention*; Article VII, *Registration Convention.*
[156] ESA, EUMETSAT, Intersputnik, EUTELSAT.
[157] Recital 14, *Regulation establishing the Programme and EUSPA*.

It was already established that although the EU is not a party to the Outer Space Treaty, its space activities are affected by it, whether through the influence of the Member States or by its nature as customary law. Furthermore, it was also said that the Liability Convention, as well as the Registration Convention, are interconnected with the Outer Space Treaty as they are extensions or elaborations of provisions included in the treaty. So, is it possible to apply the same logic also to the conventions and conclude that the EU is affected by the conventions in the same way as it is by the Outer Space Treaty?

When considering the possible influence of the Member States, we arrive at a quick and clear conclusion just by looking at the parties of the conventions. Currently, 25 out of 27 Member States of the EU are party to the Liability Convention, and 22 out of 27 of them are party to the Registration Convention. There are only two states which did not ratify either of the conventions and those are Estonia and Latvia. The obligation of compliance with these conventions is therefore, in the same way as in the case of the Outer Space Treaty, translated to the EU as well.

However, looking at the second argument, the answer is not that clear. When we consider provisions of the Outer Space Treaty as the customary law, one of the most fundamental provisions regarding the obligation to comply with international law applicable to outer space under Article III must be part of it. This provision has mostly general character explicitly mentioning only the UN Charter. There is no doubt that this provision also includes the Outer Space Treaty, as it is the basis of all space law. Based on this assumption, Articles VII and VIII in their most fundamental versions would therefore be subject to such compliance by space actors, not excluding the EU. However, to what extent would this obligation includes the Liability Convention and the Registration Convention, as extensions or elaborations of these provisions is unclear.[158] It is the author's opinion that such overreaching requirement of the EU compliance with the conventions seems to be at the very least excessive and is therefore more inclined to reject such interpretations.

Be that as it may, there is no doubt about the compliance of the EU space law with the provisions of the Outer Space Treaty and since the majority of the Member States are also parties to both conventions, it does not appear that the EU's legislation governing its space

[158] VON DER DUNK, Frans G., *The European Union and the Outer Space Treaty: Will the Twain Ever Meet?*. p. 83.

activities would have been in the conflict with any provisions of international space law even if this compliance had applied.

3.3.2. Issues with the registration and liability for space objects

Concerning the EU's relationship with the above-mentioned UN space treaties, in particular, to the obligations under Articles VII and VIII of the Outer Space Treaty, there remain two important issues that have not yet been touched upon. First, is the absence of registration of the EU's space objects by the EU. Second, is the liability of the EU for its space objects.

Since the EU cannot be a party to the Outer Space Treaty and so far, chose not to accept the rights and obligations of the Registration Convention, it is not obliged to keep the space object registry as the Outer Space Treaty implicitly imposes this obligation only on states and the EU cannot be considered a state in any relevant legal sense of the word.[159] However, the EU's space objects are still subject to registration and since the EU does not register them, it is ESA that is undertaking this task.

According to the Article IV of the Registration Convention, launching states are to provide the UN with relevant information about objects that were entered into their registry of space objects. It is from these notifications that we can assess the registration of the EU-owned space objects by ESA.[160] Nevertheless, these notifications by ESA to the UN were made only regarding Sentinel satellites used by Copernicus, with the exception of the first two satellites launched for the initial phase of Galileo.[161] The launches of the rest of the Galileo satellites were notified to the UN by France[162] and it could therefore seem that they are registered by France, but this assumption would not be

[159] VON DER DUNK, Frans G., *The European Union and the Outer Space Treaty: Will the Twain Ever Meet?*. p. 85.
[160] See, for example, *Information furnished in conformity with the Convention on Registration of Objects Launched into Outer Space Letter dated 10 November 2017 from the Legal Services Department of the European Space Agency addressed to the Secretary-General*. ST/SG/SER.E/825. Available at: https://documents-dds-ny.un.org/doc/UNDOC/GEN/V17/082/49/PDF/V1708249.pdf?OpenElement.
[161] *Information furnished in conformity with the Convention on Registration of Objects Launched into Outer Space Letter dated 5 March 2010 from Head of the Legal Department of the European Space Agency to the Secretary-General*. ST/SG/SER.E/591. Available at: https://www.unoosa.org/documents/pdf/ser591E.pdf; and *Information furnished in conformity with the Convention on Registration of Objects Launched into Outer Space Letter dated 12 June 2006 from the Head of the Legal Department of the European Space Agency to the Secretary-General*, ST/SG/SER.E/490. Available at: https://www.unoosa.org/documents/pdf/ser490E.pdf.
[162] See for example, *Information furnished in conformity with the Convention on Registration of Objects Launched into Outer Space Note verbale dated 27 March 2017 from the Permanent Mission of France to the United Nations (Vienna) addressed to the Secretary-General*. ST/SG/SER.E/797. Available at: https://documents-dds-ny.un.org/doc/UNDOC/GEN/V17/055/22/PDF/V1705522.pdf?OpenElement.

accurate. These notifications clearly state that Galileo satellites were launched from French territory on behalf of foreign operators and are not registered by France. In our case, foreign operators refer to ESA and from 2018 the EU itself.[163] Despite this change, however, the EU still does not register its space object and ESA remains the one who procures the launching of the EU's satellites, so therefore it would not seem that anything has changed on this subject.

Article VIII of the Outer Space Treaty states that the party *"on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof."*[164] Although ESA and the EU have been closely cooperating for decades, ESA is not an entity of the EU, it does not fall under the scope of EU law, and could therefore apply its own regulations in governing these space objects which can be different and potentially in contradiction with those of the EU. With ESA being gradually side-lined to more of a support role in the EU's space activities, the author believes that it would have been in benefit to the EU's space objectives if it accepted the rights and obligations from the Registration Convention, thus clarifying the legal regime, as the current situation where the EU is owner and operator of its space objects but do not have jurisdiction over them is to say at least confusing and potentially dangerous in case any disputes over these space object should arise.

Similar problems can also be identified with respect to the liability. Although the EU is not a party to the Outer Space Treaty and has not accepted rights and obligations from the Liability Convention, liability for damage caused by space objects must also apply to those devices owned by the EU. However, unlike the issues of registration, where the author pointed out that although the EU does not register its own space objects, there is no doubt as to who substitutes the EU in this activity, in terms of the liability for damage, the answer is not that clear.

According to the Outer Space Treaty as well as the Liability Convention, liable for damage is either party that launches or procures the launching of a space object, or from whose territory or facility a space object is launched.[165] These provisions indicate that

[163] *Information furnished in conformity with the Convention on Registration of Objects Launched into Outer Space Note verbale dated 20 March 2019 from the Permanent Mission of France to the United Nations (Vienna) addressed to the Secretary-General*. ST/SG/SER.E/886. Available at: https://documents-dds-ny.un.org/doc/UNDOC/GEN/V19/120/50/PDF/V1912050.pdf?OpenElement.
[164] Article VIII, *Outer Space Treaty*.
[165] Article VII, *Outer Space Treaty*; Article I, *Liability Convention*.

under international space law, liable for the EU space objects is either ESA which, on behalf of the EU, procures the launching of its space objects, or France which provides its territory and/or facilities for such launching. This conclusion would most certainly not please France and ESA, and the shared liability of the EU would have to be discussed. However, since the Liability Convention has never been invoked in a court case,[166] and there was only one claim ever filed under the convention,[167] we have no case law which could provide some clarification in this matter. This issue would most likely be settled by concluding an international agreement between the EU and the other party presumably liable for the damage on resolution and compensation of incurred damages. Such settlement would also require changes in the EU internal rules, where the distribution of the burden of compensation between the EU and the Member States would have to be defined. The liability of the EU could potentially also be derived from the liability of international organisations under general international law.[168] Either way, making a declaration of acceptance of the Liability Convention by the EU, would clarify this unclear legal regime and only strengthen the position of the EU in space. The fact that the EU has so far chosen not to do so could potentially threaten its position within the international community and is, therefore, considered by the author to be unsatisfactory.

4. RELATIONS OF THE EUROPEAN UNION WITH EUROPEAN SPACE AGENCY

4.1. Introduction of European Space Agency

ESA is a European intergovernmental organisation of 22 member states[169] dedicated to the exploration of space. It was established in 1975 when it succeeded the two pre-existing European space organisations. On one hand, European Space Research Organisation (ESRO) focusing solely on scientific space research, and on the other European Organisation for the Development and Construction of Space Vehicle Launchers (ELDO) devoted to the development and construction of space vehicle launchers and ancillary

[166] MENDES DE LEON, Pablo, *Responsibility and Liability of the EU under International Air and Space Law*. In: Le nuove frontiere del diritto dello spazio. Ordine internazionale e diritti umani 2018. p. 83. Available at: https://scholarlypublications.universiteitleiden.nl/handle/1887/68815.
[167] In 1978, the crash of the nuclear-powered Soviet satellite Kosmos 954 in Canadian territory led to the only claim filed under the convention.
[168] MENDES DE LEON, Pablo, *Responsibility and Liability of the EU under International Air and Space Law*. p. 80.
[169] 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.

equipment. These organisations, due to the insufficient results, were merged into one organisation and consequently, in 1975 transformed into ESA.

ESA Convention[170], signed in 1975 and ratified by founding member states by 1980, is the founding document of ESA providing an extensive framework for the operation of ESA. ESA's main purpose is to promote and elaborate cooperation among European states in the exclusively peaceful exploration of outer space and space research and technology and their space applications.[171] ESA Convention also establishes the two main governing organs: the Council of member states (to avoid any confusion with the EU bodies, hereafter referred to as the "ESA Council") meeting either at ministerial or delegate level with the competence to provide the basic policy guidelines within which ESA develops its space programme,[172] and Director General who is assisted by staff and is the chief executive officer and legal representative of ESA elected by the ESA Council every four years.[173]

In general, ESA carries out three types of activities. Firstly, there are mandatory activities which are mostly of a scientific and R&D nature and once approved by the ESA Council, all member states must contribute to their implementation on the basis of their gross national product.[174] Secondly, there are optional activities which are of a much more practical nature and concern the design, development, or construction of satellites, or the operation of launch facilities which, in contrast to mandatory activities, allow a member state to opt-out from their implementation.[175] And last but not least, ESA also provides operational services for and on behalf of other space actors, namely placing ESA facilities at their disposal, or ensuring the launching, placing in orbit and control of operational satellites, at the cost borne by such space actors.[176] Several international space actors use this particular service of ESA and the EU is one of them.

To procure these activities, ESA draws up an annual budget from funds allocated not only by its member states but also by other partners, including the EU. For 2023, ESA's budget

[170] *Convention for the Establishment of a European Space Agency* (hereafter ESA Convention). Paris, done 30 May 1975, entered into force 30 October 1980, Available at: https://esamultimedia.esa.int/multimedia/publications/SP-1337/SP-1337_EN.pdf.
[171] Article II, *ESA Convention*.
[172] Article XI, *ESA Convention*.
[173] Article XII, *ESA Convention*.
[174] Article V(1.a), *ESA Convention*.
[175] Article V(1.b), *ESA Convention*.
[176] Article V(2), *ESA Convention*.

amounts to a total of EUR 7,08 billion out of which 24.2% is income from the EU.[177] The size of ESA's budget as well as the EU's participation in it shows us two things. On one hand, although ESA's influence on EU space activities is limited, its role is still not negligible. On the other, when we consider the EU's budget of a total of EUR 16,530 billion (consisting of EUR 14,88 billion provided for the Programme for the period of 2021-2027 and EUR 1,65 billion provided for the implementation of IRIS² for the period of 2023-2027[178]) and compare it with ESA's budget just for 2023, we come to a realisation that ESA's budget for a single year is almost the half of what the EU dedicated for its space activities for the period of seven years. And when we add NASA's budget of USD 25,4 billion for 2023[179] to this mix, we must conclude that the EU's space budget, although the largest in history, does not necessarily reflect the EU's ambitious efforts to achieve leadership at the global level and in comparison, with the biggest international players, it is significantly smaller.

4.2. Cooperation of the European Union with European Space Agency

The subject of cooperation between the EU and ESA has been discussed several times in this thesis. The author has talked about ESA's involvement in the governance of the Programme, ESA's contributions to the development and operation of Galileo and Copernicus components, and ESA's role in the procurement of the EU's space objects and their registration and liability. These were mostly practical aspects of the EU-ESA cooperation. In the following pages, the author will therefore briefly look at the legal basis of their cooperation and consider the issues arising from this relationship.

4.2.1. Framework Agreement of 2004

The increasing cooperation and coordination between the EU and ESA at the turn of the century have triggered the need for the solidification of their relationship. Thus in 2004, the Framework Agreement between the EU and ESA entered into force.[180] As the name implies, this agreement regulates only fundamental questions of the EU-ESA cooperation such as purpose, principles, or fields of the common space activities of the EU and ESA.

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[177] *ESA budget 2023*. ESA [online]. [accessed on and cited 1 Apr. 2023]. Available at: https://www.esa.int/ESA_Multimedia/Images/2023/01/ESA_budget_2023.

[178] Article 13, *Regulation on IRIS²*.

[179] *NASA's FY 2023 Budget*. The Planetary Society [online]. [accessed on and cited 1 Apr. 2023]. Available at: https://www.planetary.org/space-policy/nasas-fy-2023-budget.

[180] *Framework Agreement between the European Community and the European Space Agency* (hereafter Framework Agreement of 2004). Brussels, done 25 November 2003, entered into force 28 May 2004, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A22004A0806%2803%29.

It also provides possible forms of cooperation on the EU-ESA initiatives and for each cooperation ad hoc arrangements are required. These forms of cooperation are (i) ESA managing projects for the EU, (ii) the EU participating in ESA optional programmes, (iii) joint coordination, and foundation of activities, (iv) the creation of joint bodies charged with the pursuit of certain activities, or (v) promoting education, exchange and support of scientific and technical workers or equipment.[181] With regard to any financial contribution of the EU to joint initiatives, the EU expressly refused to be bound by the principle of "geographical return" which ESA applies.[182] This principle, also often referred to as "*fair return*" or "*juste retour*" in essence means that each member state of ESA should receive a return proportionate to its investment into ESA, and as such is in stark contradiction with the EU premise of free competition,[183] thus making it unacceptable for the EU.

The Framework Agreement also established the so-called Space Council, which represents annual joint and concomitant meetings of the Council and the ESA Council at the ministerial level dedicated to the coordination and facilitation of cooperative activities of the EU and ESA.[184] During the period 2004-2011, the Space Council meetings indeed took place annually. However, the next formal meeting was not held for eight years until 2019. Although declarations were made that the Space Council will seek to meet once a year going forward,[185] the last formal meeting took place in 2020. Officials of the EU and ESA never stated publicly what is the reason behind this pause but based on the EU-ESA's not always harmonical relationship, we can assume that it was not just a coincidence.

4.2.2. The United Europe in Space – possibility or utopia?

As the author has shown, the EU and ESA successfully cooperate on their joint projects for decades. It could therefore seem that the relations between them is smooth. However, from the institutional point of view, this is not entirely true. The EU and ESA have held debates and had disagreements on the legal form of their relationship almost from the

[181] Article 5, *Framework Agreement of 2004*.
[182] Ibid.
[183] MASSON-ZWAAN, Tanja, HOFMANN, Mahulena, *Introduction to Space Law*. p. 64.
[184] Article 8, *Framework Agreement of 2004*.
[185] *EU, ESA revive joint Space Council after eight-year pause.* SpaceNews [online]. [accessed on and cited 2 Apr. 2023]. Available at: https://spacenews.com/eu-esa-revive-joint-space-council-after-eight-year-pause/.

very beginning of their cooperation.[186] At that point ESA was already a successful and deeply rooted space organization, whilst the EU only began to write its own space story, so this did not seem to be a particularly pressing issue. But as time went by and the EU engaged more and more in space activities, the question of whether to integrate ESA into the EU as its space agency and thus unite Europe in space, inevitably arose and gradually became one of the most controversial and disputed issues in the EU-ESA relationship.

Attempts to integrate ESA into the EU have mostly been initiated by the EU representatives and the reasons, at least from the EU point of view, have always seem to be more of a pragmatic rather than affectionate nature. When the EU decided to become a serious international space player, it realised that this position could not be properly established unless autonomy and independence from other countries, in particular the US, were assured.[187] The EU recognised that the most logical way to achieve this would be to tighten its affiliations with ESA, as the member states of the EU and ESA have always been very similar and currently are almost identical, making up 19 out of 22 member states of ESA.[188] Furthermore, the same applies to the ESA's annual budget, when its vast majority is contributed by the EU and their common member states.[189]

As a result of this effort, the EU and ESA concluded the Framework Agreement of 2004 which, as we have shown above, in no way addresses this issue, and thus fell short of providing the wanted solution. However, this was not the end, but rather the beginning. The importance of establishing appropriate relations with ESA was stressed by Article 189 paragraph 3 of TFEU, which some authors consider to be the basis for the EU-ESA integration.[190] In 2012, the Commission elaborated on this initiative, issuing its Communication on Establishing appropriate relations between the EU and ESA, calling for removing the deficiencies it had seen in their relationship and to this end even provided several solutions, such as bringing ESA as an IGO under the authority of the

[186] CROSS, Mai'a K., *"United Space in Europe?" The European Space Agency and the EU Space Programme*. In: European Foreign Affairs Review 26, Special Issue Kluwer Law International, 2021. p. 38. Available at: https://kluwerlawonline.com/journalarticle/European+Foreign+Affairs+Review/26.3/EERR2021025.
[187] *Green Paper: European Space Policy* (COM(2003) 17 final). European Commission 21 January 2003, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52003DC0017.
[188] Non-EU member states of ESA are Norway, Switzerland, and the United Kingdom.
[189] For more details see: https://www.esa.int/ESA_Multimedia/Images/2023/01/ESA_budget_2023.
[190] HOFMANNOVÁ, Mahulena, *Penetration of Union Law into the Space Sector*. p. 204.

EU or transforming ESA into an EU agency.[191] The pressure on ESA's transformation continued when in 2014 the Commission issued an official progress report on their relationship, more or less stating that no changes have been made and previously recognised shortcomings still exist.[192] Although ESA itself envisaged the possibility of becoming the EU agency by 2014,[193] these efforts and pressures towards integration with the EU were mostly received with scepticism and rejection. So, after the EU recognised that ESA has no desire whatsoever to become part of the EU, it decided to pursue another path. This started with the launching of its new space strategy in 2016, which was for the first time developed without ESA and so far, ended with the adoption of the Programme and establishment of EUSPA as "the" agency of the EU for its space activities with a much broader mandate than any other EU space-related body has ever had, and thus in a way substituting the envisaged role of ESA in the EU.

Now that the author has briefly summarized the attempts to integrate ESA in the EU, let's take a look at the biggest obstacles that stand in the way of the United Space in Europe.

For one, there are identity differences. ESA has always been more focused on the technical and scientific part of space activities emphasising the peaceful use of outer space, while the EU's identity is more political and focused on economic benefits for its citizens and applied use of outer space. For ESA, this seems to be the most essential argument and the worry is that a significant amount of its operational know-how could be lost in the process of integration.[194]

The second obstacle is different, and somewhat incompatible decision-making procedures. In the ESA Council, each member state is represented by a designated minister and each of them has one vote, thus contributing equally to ESA's space policies. However, when it comes to the EU space policies decision-making process, it is vastly different. It takes place on the floor of the Commission which is an independent and supranational body of the EU and represents the interests of the EU and not the Member

[191] *Communication on Establishing appropriate relations between the EU and ESA* (COM(2012) 671 final). European Commission 14 November 2012, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0671&from=EN

[192] *Progress report on establishing appropriate relations between the EU and ESA* (COM(2014) 056 final). European Commission 6 February 2014, Available at: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52013DC0056.

[193] *AGENDA 2011: A Document by the ESA Director General and the ESA Directors – October 2006* (BR-268). ESA September 2007, Available at: https://www.esa.int/esapub/br/br268/br268.pdf, p. 25.

[194] CROSS, Mai'a K., *"United Space in Europe?" The European Space Agency and the EU Space Programme.* p. 34.

States. Furthermore, although the member states of the EU and ESA are almost identical and this is one of the arguments for integration, it also represents one of the EU's major concerns, when integration of the EU and ESA could cause that non-Member States of the EU might have a potential impact on the EU space policies.[195] All of this would make the integration of ESA into the EU highly complicated and difficult to implement, which in the end was also recognised by the EU.[196]

In conclusion, the EU-ESA's relations, despite their fruitful cooperation, have been fragile and precarious in the past years. However, at the 13th European Space Conference held in 2021, both sides declared a joint commitment to rebuild their relationship.[197] Moreover, the establishment of EUSPA suggests that the EU, at least for now, abandoned the idea of ESA's integration. We must therefore conclude that the United Europe in Space thus remains a utopia rather than a possibility. Nevertheless, the idea of the United Europe in Space is not only about being represented by one player but also about speaking with one voice when it comes to other space powers. There is a lot of progress that needs to be done in that regard. Although it seems unlikely at this moment, only the future will show if the United Europe in Space emerges in any form.

[195] CROSS, Mai'a K., *"United Space in Europe?" The European Space Agency and the EU Space Programme.* p. 42.
[196] See. *supra n. 192.*
[197] *ESA and EU mend relations*. SpaceNews [online]. [accessed on and cited 7 Apr. 2023]. Available at: https://spacenews.com/esa-and-eu-mend-relations/.

CONCLUSION

This thesis has provided a comprehensive outlook on the EU's position in the system of international space law with an emphasis on the evolution of the EU's involvement in space, the current EU space programme, its competence and potential legal issues, the position of the EU in the structures of the UN space bodies and its position on the selected UN space treaties as well as their influence on the EU space legislation and activities, and last but not least, the EU relations with ESA, legal background, issues arising from their cooperation, and possible outlook for the future development.

The first chapter briefly discussed the evolution of the EU's involvement in space from the establishment of ECSC, Euratom and eventually EC when there was no interest to be involved in space, to SEA and its R&D provisions which did not specifically mention space but provided the first broader legal background for the EC's initial space activities. The author has identified that the reasons for the EC's originally reserved approach to space activities lay in the lack of involvement of the private sector and the absence of commercial use that could benefit the EC, the Member States, or its citizens.

Furthermore, other important milestones in the development of the EU's space legislation were presented, starting with Satellite Directive and Database Directive as the first ever EU legal regulations dealing with specific space issues, the adoption of which made the EU a creator of space law, followed by the establishment of EGNOS and Galileo as the first space projects of the EU, the foundation of which made the EU a true space actor. Nevertheless, as pointed out, the space competence of the EU was not defined until the Lisbon Treaty. Therefore, a significant part of this chapter was devoted to the analysis of Article 189 TFEU where the space competence of the EU is embedded. Firstly, the space competence was introduced, and it was described why it is considered a parallel competence within the framework of EU law, and what are the features of this special type of competence. Subsequently, the discussion delved into the consequences of the EU's inability to harmonise the national space laws of the Member States and, how, in the author's opinion, this prevents the EU's space competence from becoming a comprehensive legal instrument.

In the second chapter, the thesis examined the latest legal regulations governing the EU space activities and analysed the most significant aspects of the Programme. The author has concluded that the goal of the Regulation to consolidate the legal rules under which

the EU undertakes its space activities has been achieved. For the first time, the EU's general objectives in the field of space, which were not formulated in any legally binding document up to this moment, are set out in one place. Most of these objectives already existed and were not modified by the Regulation. However, the Regulation also outlined a set of new objectives dealing with the security and defence of the EU and the Member States, serving as a background for the EU's newest space programmes, GOVSATCOM and IRIS², which were identified as the first EU's space initiatives with a strong security dimension.

Attention was also given to the EU's launching policy, as this was defined as one of the Programme's specific objectives. The author analysed the EU's ambitions set out in the Regulation and compared them with reality and concluded that although the EU aims at ensuring autonomous, secure, and cost-efficient access to space, it does not treat this matter as its priority and is heavily dependent on other space actors to provide it with rockets and launching sites to carry its space objects into orbit.

Connection with other policies of the EU and international cooperation on the Programme was discussed as well. It was examined and concluded that in support of its role as a global actor, the EU cooperates with IGOs and non-Member States countries and allows them to draw benefits from the Programme. On the other hand, the Programme supports a variety of other EU policies and thus also serves the interest of the EU, the Member States, and its citizens.

Another objective of the Regulation was to streamline the Programme's governance. Therefore, the thesis discussed the actors involved in the governance and explained their respective roles, which can be summarized as follows: the Commission is in charge of the Programme and has regulatory powers, EUSPA is in charge of day-to-day operations and implementations of the Programme, the Member States have a supplementary role and provides mostly material and technical capabilities, and finally ESA, which contribution to the Programme has been gradually limited to research and technical support. The author drew two conclusions from the above. Firstly, the Regulation provides a clear division of tasks between entities involved in the governance of the Programme. Secondly, the governance of the Programme is still far too complex and fragmented which can be confusing for users and partners. Nevertheless, it was concluded that, at the moment, this complexity seems to be unavoidable and, therefore, the objective

of streamlining the Programme's governance can be considered to have been, at least partially, fulfilled.

Last but not least, the second chapter of the thesis presented individual components of the Programme with the ambition to briefly explain how they work, what is their nature, what services they offer and thus bring the EU's space activities closer to the readers. It was established that the so-called flagships of the Programme are Galileo, EGNOS, and Copernicus. Galileo and EGNOS are closely interconnected as Galileo is a European GNSS and EGNOS is a satellite-based augmentation system, that is used to improve the performance of GNSS. Together they form one constellation of the EU's satellites. Copernicus forms the second constellation, and it is a European Earth observation programme that monitors the planet and collects and provides environmental data. Another component of the Programme is SSA which provides the EU with the necessary capability to protect critical infrastructure in space and from space. GOVSATCOM and IRIS² are the most recent components of the Programme. They are focused on providing secure communications capabilities to security and safety-critical missions and operations, such as border surveillance, and thus represent a new era in the EU's space activities. While still maintaining civilian management, their services aim to improve the EU's capacity for action in security areas. The author, therefore, concluded that the nature of the EU's space activities remains civilian, but recent developments are gradually moving it towards strong security elements.

In the next chapter, the two most relevant bodies of the UN dealing with issues in space – the General Assembly and COPUOS were briefly introduced and the position of the EU within these bodies, where the EU has the status of permanent observer, was explained.

After providing general information on the Outer Space Treaty, the Liability Convention, and the Registration Convention, the thesis analysed the EU's relationship with these treaties and their impact on its legislative and operational space activities. It was noted that the EU is not a party to any of the above-mentioned treaties and it was explained that while the Outer Space Treaty does not provide the possibility for any IGO to act as a party to the treaty, the Liability Convention, and the Registration Convention allows this, however, at the time of writing, the EU has not yet assumed rights and obligations arising from the conventions.

Despite this fact, the author identified that these treaties affect the EU's space activities and went on to examine how. He established that this influence is essentially twofold. Firstly, 26 out of 27 Member States are currently party to the Outer Space Treaty and are therefore obliged, in accordance with the principles of international law, to respect it and to take it into account when drafting legislation applicable in their territories. Secondly, the most substantial provisions of the Outer Space Treaty are generally considered to be part of the customary international law and the EU is bound to respect them. The provisions of the Outer Space Treaty have thus been indirectly translated into the EU space law through the influence of the Member States and its nature as customary law.

The same logic was applied to the Liability Convention, and the Registration Convention and, by analogy, it was examined whether the conventions could similarly translate into the EU space legislation. It was concluded that whilst the influence of the Member States could impact the EU space activities as a large majority of the Member States are also party to these conventions, regarding the argument of customary international law the answer is not that clear. The author is not inclined to the interpretation of the conventions being part of the customary international law, as they are in their basics elaboration of principles embedded in the Outer Space Treaty, and therefore rejected the possibility of the existence of such overreaching requirement of the EU compliance with the conventions.

Based on the above, the author has concluded that although the EU is not a party to these UN space treaties, its space activities do not take place in a legal vacuum and essentially comply with the above-mentioned treaties.

The absence of acceptance of the rights and obligations under the Liability Convention, and the Registration Convention gives rise to two major issues for the EU which were addressed in the last part of the third chapter. The first issue is associated with the registration of the EU's space objects. It was established that while the EU is not obliged to keep a space object registry, its space objects are still subjected to registration, which is carried out by ESA. This raises concerns about who exercises jurisdiction and control over these space objects and could potentially lead to disputes. The second issue is associated with the liability for the EU's space objects. In case of damage caused by these space objects, it is unclear who would be liable for the damage, as according to the international law, it would not be the EU but rather entities who procured the launching.

In the author's view, this would not be acceptable to those entities and should not be acceptable to the EU as it would threaten its position in the international community.

The author therefore believes that the only satisfactory solution to resolve these issues is for the EU to accept the rights and obligations under the Liability Convention, and the Registration Convention.

The fourth and last chapter of this thesis analysed the legal background and challenges of the EU-ESA relationship. After providing brief information about the establishment, organisation and operation of ESA, the Framework Agreement as the legal basis of the EU-ESA cooperation was introduced. It was pointed out what forms their cooperation can take, how the EU refused to be bound by ESA's most important principle of geographical return, or how they established a joint body which was supposed to meet annually to facilitate their cooperation but because of disagreements had not met for years, at one point. By describing the efforts to integrate ESA into the EU, the author also explained the dynamics of their relations, why this initiative of the EU was doomed to fail due to the different identities and their decision-making process, and why he concluded that the notion of the United Space in Europe is, for the time being, only utopia.

In conclusion, outer space has been an important part of the EU policies for decades, and yet the fact that the EU is involved in space activities is little known to the general public. The author hopes that by providing this comprehensive outlook on the EU's position in the system of international space law, he has not only addressed the legal and political issues associated with this topic but has also contributed to raising readers' awareness in this area.

LIST OF ABBREVIATIONS

Commission	The European Commission
Constitutional Treaty	Draft Treaty establishing a Constitution for Europe
Council	The Council of the European Union
COPUOS	The United Nations Committee on the Peaceful Uses of Outer Space
COSPAS-SARSAT	Search And Rescue Satellite-Aided Tracking
Database Directive	Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases
EC	European Communities
ECSC	European Coal and Steel Community
EEC	European Economic Community
EEC Treaty	Treaty establishing the European Economic Community
EGNOS	European Geostationary Navigation Overlay System
ELDO	European Organisation for the Development and Construction of Space Vehicle Launchers
ES	Emergency service
ESA	European Space Agency
ESA Convention	Convention for the Establishment of a European Space Agency
ESA Council	Council of member states of ESA
ESRO	European Space Research Organisation
EU	The European Union
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
Euratom	European Atomic Energy Community

EUSPA	European Union Agency for the Space Programme
EUTELSAT	European Telecommunications Satellite Organization
GMES	Global Monitoring for the Environment and Security
GLONASS	Global Navigation Satellite System (Russian-operated system)
GNSS	Global Navigation Satellite System (general term)
GOVSATCOM	Governmental Satellite Communications
GOS	Galileo open service
GPS	Global Positioning System
GSA	European Global Navigation Satellite System Agency
HAS	High accuracy service
IGO	International organization / Intergovernmental organisation
INMARSAT	International Maritime Satellite Organization
INTELSAT	International Telecommunications Satellite Organization
IRIS²	Infrastructure for Resilience, Interconnectivity and Security by Satellite
Liability Convention	Convention on International Liability for Damage Caused by Space Objects
Member States	Member states of the European Union
MFF	Multiannual Financial Framework
NASA	National Aeronautics and Space Administration
NEO	Near-Earth Objects
Outer Space Treaty	Treaty on Principles Governing the Activities of States in the Exploration and

	Use of Outer Space, including the Moon and Other Celestial Bodies
Parliament	The European Parliament
Programme	The European Union Space Programme
PRS	Public regulated service
R&D	Research and development
Registration Convention	Convention on Registration of Objects Launched into Outer Space
Regulation	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
Regulation on IRIS²	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
Satellite Directive	Commission Directive 94/46/EC of 13 October 1994 amending Directive 88/301/EEC and Directive 90/388/EEC in particular with regard to satellite communications
SATCEN	European Union Satellite Centre
SAS	Signal authentication service
SEA	Single European Act
SSA	Space Situational Awareness
SST	Space Surveillance and Tracking
SWE	Space Weather

TEU	Treaty on the European Union
TFEU	Treaty on the Functioning of the European Union
TS	Timing service
UN	The United Nations
UNOOSA	The United Nations Office for Outer Space Affairs
US	The United States

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Title of the thesis in English

The European Union as an Actor of International Space Law

ABSTRACT

This thesis aims to provide a comprehensive outlook on the EU's position in the system of international space law. It delves into the structure, legal regulations, nature, and individual components of the EU's space programme. Furthermore, it examines the space dimension in relations between the EU and the UN, and the EU's position on the selected UN space treaties. Additionally, the thesis discusses the cooperation between the EU and ESA, and the nuances of their relations.

The first chapter provides a historical overview of the EU's involvement in space and explores the nature and limitations of the EU's space competence within the framework of EU law.

In the second chapter, the EU's present space activities are analysed, focusing on the recent legal regulations governing the EU's space programme. This chapter also assesses the objectives, structure, and governance of the EU's space activities and explores the individual components of the EU's space programme and their character.

The third chapter examines the EU's stance on the Outer Space Treaty, the Liability Convention, and the Registration Convention. It discusses their impact on the EU's space legislation, as well as the issues connected with the registration and liability for the EU space objects. The chapter also briefly discusses the EU's status within the UN and its respective space organs, focusing on essential aspects relevant to the thesis.

The fourth and final chapter explores the relationship between the EU and ESA. It introduces ESA, analyses the legal framework governing their cooperation, and highlights differences in their operations. Moreover, the chapter evaluates the existing relationship between the EU and ESA, providing an outlook on the prospects for their future cooperation.

Through a comprehensive analysis of the EU's position in the system of international space law, this thesis offers valuable insights into the EU's space activities, its engagement with the UN in space-related matters, and its cooperation with ESA, thus contributing to a deeper understanding of the European space sector as a whole.

Keywords: space law, European Union, Outer Space Treaty, Liability Convention, Registration Convention, European Space Agency

Názov práce v slovenskom jazyku

Európska únia ako aktér medzinárodného kozmického práva

ABSTRAKT

Cieľom tejto práce je poskytnúť komplexný pohľad na postavenie EÚ v systéme medzinárodného vesmírneho práva. Práca sa venuje štruktúre, právnej úprave, povahe a jednotlivým zložkám vesmírneho programu EÚ. Ďalej skúma vesmírny rozmer vo vzťahoch medzi EÚ a OSN a postoj EÚ k vybraným zmluvám OSN o vesmíre. Okrem toho sa práca zaoberá aj spoluprácou medzi EÚ a ESA a nuansami ich vzťahov.

Prvá kapitola poskytuje historický prehľad pôsobenia EÚ vo vesmíre a skúma povahu a obmedzenia vesmírnych právomocí EÚ v rámci práva EÚ.

V druhej kapitole sa analyzujú súčasné vesmírne aktivity EÚ so zameraním na aktuálne právne predpisy upravujúce vesmírny program EÚ. V tejto kapitole sa tiež hodnotia ciele, štruktúra, a riadenie vesmírnych aktivít EÚ a skúmajú sa jednotlivé zložky vesmírneho programu EÚ a ich charakter.

Tretia kapitola skúma postoj EÚ ku Kozmickej zmluve, Dohovoru o medzinárodnej zodpovednosti za škodu a Dohovoru o registrácii. Rozoberá ich vplyv na vesmírne právne predpisy EÚ, ako aj problémy spojené s registráciou a zodpovednosť za vesmírne objekty EÚ. Kapitola sa tiež stručne zaoberá postavením EÚ v rámci OSN a jej príslušných vesmírnych orgánov, pričom sa zameriava na podstatné aspekty relevantné pre túto prácu.

Štvrtá a záverečná kapitola skúma vzťahy medzi EÚ a ESA. Predstavuje ESA, analyzuje právny rámec upravujúci ich spoluprácu a poukazuje na rozdiely v ich činnosti. Okrem toho kapitola hodnotí existujúci vzťah medzi EÚ a ESA a poskytuje pohľad na perspektívy ich budúcej spolupráce.

Prostredníctvom komplexnej analýzy postavenia EÚ v systéme medzinárodného vesmírneho práva, táto práca ponúka cenné poznatky o vesmírnych aktivitách EÚ, jej angažovanosti v OSN v otázkach týkajúcich sa vesmíru a jej spolupráci s ESA, čím prispieva k hlbšiemu pochopeniu európskeho vesmírneho sektora ako celku.

Kľúčové slová: kozmické právo, Európska únia, Kozmická zmluva, Dohovor o medzinárodnej zodpovednosti za škodu, Dohovor o registrácii, Európska vesmírna agentúra