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Liechtenstein's quest for space utilisation and its new Space Act

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Con l'adozione della propria legge sullo spazio il 5 ottobre 2023, il Principato del Liechtenstein si è unito a un numero crescente di paesi nell'adottare una legislazione nazionale in materia di spazio. La nuova legge sullo spazio prevede norme per l'autorizzazione delle attività spaziali, la registrazione degli oggetti spaziali e la responsabilità e l'assicurazione degli operatori privati. Attraverso la legge sullo spazio, il sesto paese più piccolo del mondo mira a creare un quadro trasparente, prevedibile e competitivo per le attività spaziali, attirando innovatori, imprenditori e start-up e ispirando una nuova ondata di innovazione e progresso. Vale la pena di rilevare che, al momento dell'adozione della nuova legge del Liechtenstein, una legislazione di questo tipo ancora mancava nella Repubblica federale di Germania, in Svizzera e in Italia. Lo scopo di questo articolo è triplice. In primo luogo, di discutere i principali pilastri della legislazione spaziale del Liechtenstein recentemente adottata. In secondo luogo, di mettere in evidenza come la legislazione recentemente adottata rappresenta una legislazione moderna e innovativa che, sebbene orientata principalmente verso l'uso commerciale dello spazio, fornisce anche una solida base giuridica per la ricerca e lo sviluppo nel settore. Infine, discutendo l'ispirazione della nuova legislazione adottata nel Principato del Liechtenstein, questo articolo mira a dimostrare la continua fecondazione incrociata tra le legislazioni nazionali in materia di spazio in Europa.

By adopting its own Space Act on 5th October 2023, the Principality of Liechtenstein has joined a growing number of countries in national space legislation. The newly adopted Space Act provides rules for the authorisation of space activities, registration of space objects, and liability and insurance of private operators. Through the Space Act, the 6th smallest country worldwide aims to establish a transparent, predictable and competitive framework for space activities, attracting space innovators, entrepreneurs and start-ups and inspiring a new wave of innovation and progress. It

is worth noting that this type of legislation was still absent in the Federal Republic of Germany, Switzerland, and Italy when adopting the new Liechtenstein Space Act. The aim of this article is threefold. Firstly, this article discusses the main pillars of the newly adopted Liechtenstein space legislation. Secondly, it is argued that the newly adopted legislation represents modern and novel legislation. While primarily oriented on commercial use of space, it also provides a solid legal basis for research and development of space utilisation. Lastly, by discussing the inspiration of the newly adopted legislation in the Principality of Liechtenstein, this article aims to demonstrate the ongoing cross-fertilisation between national space legislation in Europe.

Summary: 1. Introduction.- 2. Scope of the application of the Space Act.- 3. Exercise of space activities under the jurisdiction of the Principality of Liechtenstein.- 4. Prevention of damages.- 4.1. Liability for damages, mandatory insurance and the right of recourse.- 4.2. Change of control of the operator.- 5. Registration of space objects.- 6. Conclusions.

1. Introduction

Space law in Europe has been in a process of turbulent changes. In several states, new national space legislation has been adopted to address challenges arising from the activities in space. This has been the case in Belgium (2005), the Netherlands (2007), France (2008), Austria (2011), Denmark (2016), Greece (2017), Finland (2018), Portugal (2019), the Grand Duchy of Luxembourg (2020), Slovenia (2022) and quite recently also in Cyprus (2023). Legislative activities towards adopting national space acts are pending in the Federal Republic of Germany, Latvia and Spain. In June 2024, the Italian Council of Ministers adopted a framework law on space activities to be examined by Parliament. All these legislative activities reflect the challenges arising in the New Space Era, where the commercialisation of space exploration has attracted massive interest from space innovators, emerging start-ups and innovative clusters. At the same time, a legislative initiative to address space activities has been announced by the European Union (EU). The newly proposed EU Space Law, when enacted, will provide a common framework for resilience, safety, and sustainability in space,

ensuring a consistent and EU-wide approach. The fact is, however, that further work on the text of the prospective EU Space Law has been postponed to April 2024. It is important to stress that in several cases, the Member States hesitate to adopt their national legislation due to the pending preparations of a new framework at the EU level, which could significantly impact the European space legislation landscape.

On 5 October 2023, the Principality of Liechtenstein joined these efforts by adopting its own Space Act^[1]. Subsequently, the Space Act was published in the Liechtenstein Law Gazette (*Liechtensteinisches Landesgesetzblatt*)^[2] on 6 December 2023 and entered into force on 1 January 2024^[3].

By adopting its space legislation, the 6th smallest country worldwide aims to establish a transparent, predictable and competitive legal framework for space innovators, entrepreneurs and start-ups^[4]. The background to the Liechtenstein engagement in the space field is a satellite project of a Chinese private enterprise, which aimed to provide broadband internet by placing around 600 satellites with Liechtenstein frequencies into orbit around the earth^[5]. The Explanatory Memorandum, as submitted by the Government to the Parliament of the Principality of Liechtenstein (from now on, “the Explanatory Memorandum”)^[6] outlines the targets of the newly adopted legislation as follows: (i) Firstly, the Space Act reflects the obligations of the Principality of Liechtenstein, arising from the Convention on International Liability for Damage Caused by Space Objects (from now on “the Liability Convention”)^[7]. The Liability Convention provides that liability for damages caused by space activities is directly linked to the launching State^[8]. In this respect, the Space Act aims to prevent damage caused by space objects for which Liechtenstein may be liable internationally^[9]. (ii) Secondly, the provisions of the Space Act also reflect the obligation to establish a national register of space objects, as arising from the Convention on Registration of Objects Launched into Outer Space (from now on, “the Registration Convention”)^[10]. (iii) Thirdly, the Space Act aims to reflect the growing privatisation and commercialisation of the space sector by providing clear rules for the authorisation of space activities in the jurisdiction of Liechtenstein.

At the same time, the very recent adoption of space legislation in the Principality of Liechtenstein represents another demonstration of the growing interest of

small states in the development of the space industry^[11]. So far, two such small states – the Grand Duchy of Luxembourg^[12] and the city-state of Singapore^[13] – have already become successful space hubs. The Principality of Monaco, which established the Office for Outer Space Affairs^[14] in 2021, has announced the same ambitions to attract the space industry to its jurisdiction. All these small states have identified the space industry as a prospective branch of the future economy. At the same time, establishing its space programme is also a matter of prestige, and it elevates the international reputation of small states^[15]. Consequently, they aim to develop an attractive legal and regulatory environment that will be competitive enough to attract space companies, innovators, and start-ups. In this respect, one must bear in mind that the Principality of Liechtenstein adopted the Space Act at the moment, and any similar legislation was missing in neighbouring Switzerland and the Federal Republic of Germany^[16]. Neither Italy possessed any valid legislation on space activities at that time.

This article aims to achieve three goals: first, it discusses the main pillars of the newly adopted Liechtenstein space legislation; second, it argues that it represents modern and novel legislation. While primarily oriented on commercial use of space, it also provides a solid legal basis for research and development of space utilisation. Lastly, by discussing the inspiration sources of the newly adopted legislation in the Principality of Liechtenstein, this article aims to demonstrate the ongoing cross-fertilisation between national space legislation in Europe.

2. Scope of the application of the Space Act

Facing the challenges of the gradual commercialisation of space, the newly adopted Space Act aims to apply to space activity (*Weltraumaktivität*), which is defined^[17] as activity that consists of conducting or initiating the launch of a space object or controlling or utilising a space object during its stay in space and its return to Earth. Further, the scope of the application also «*covers any other activity taking place in space for which Liechtenstein may be held internationally liable*»^[18]. The reason for such a broad scope of application is the desire to cover as wide a range of activities as possible. With such a vast scope of application, the Space Law aims to reflect the scope of application of the Liability Convention, which goes beyond a mere *control* or *utilisation* of space objects. In this respect,

the Explanatory Memorandum reveals^[19] that the discussed wording of the Liechtenstein legislation was inspired by a similar provision provided by the General Act on Space Activities of the Grand Duchy of Luxembourg.

The Space Act explicitly specifies those “space activities”, which international public law considers^[20] to be the international responsibility of the Principality of Liechtenstein. In this respect, the Space Act applies the criteria of “territorial” and “personal” jurisdiction of the Principality. Thus, the Space Act shall apply to space activities conducted or initiated to be conducted (i) on the territory of Liechtenstein^[21] or (ii) on movable or immovable assets registered in Liechtenstein or otherwise subject to Liechtenstein legislation^[22]. Further, the Space Act shall apply to space activities conducted or initiated by a person who (i) has Liechtenstein citizenship^[23] or (ii) is a legal entity with its registered office or is registered in Liechtenstein^[24].

The Space Act entered into force on 1 January 2024. Under a transitional provision, it shall apply to space activities conducted after this date. A special transitional regime is being provided for space activities commissioned before the entry into force of the Space Act^[25].

Concerning the space activities under the international responsibility of the Principality of Liechtenstein, it also must be mentioned that the Space Act has introduced rules for their authorisation and regulatory supervision, prevention of damages, registration of space objects and rules for sustainability and space debris mitigation^[26]. Consequently, neither the regulation of public procurement in the space area nor the research and development fall under the scope of the application of the Space Law.

3. Exercise of space activities under the jurisdiction of the Principality of Liechtenstein

In Chapter II, entitled Exercise of space activities (*Ausübung von Weltraumaktivitäten*), the Space Law provides rules that must be followed if the space activity is to be realised under the jurisdiction of the Principality of Liechtenstein. When these rules were drafted, three different interests were taken into consideration. (i) Firstly, this Chapter aims to fulfil the obligations arising concerning space activities under the jurisdiction of the Principality of

Liechtenstein from international law^[27]. (ii) Secondly, the provisions of this Chapter aim to establish a transparent, predictable and competitive framework for space operators^[28]. In this respect, these provisions aim to attract these operators into the jurisdiction of the Principality of Liechtenstein. (iii) Thirdly, this chapter's provisions also reflect the public's interest in minimising any harmful consequences of space activities. In this respect, quite strict requirements, which a potential space operator must fulfil to obtain an authorisation, have been introduced into the Space Act. These requirements aim to maintain a high level of professional qualification and financial stability of the operators. Thus, the provisions of the Chapter II. represent a compromise between the above outlined interests.

The Space Act provides^[29] that any conduct or any initiation of space activities requires an authorisation (*Genehmigung*) of the Supervisory Authority^[30]. In this respect, the Space Act provides that the Government of the Principality of Liechtenstein shall specify the application details, mainly the information and documents required to demonstrate compliance with the requirements, by an Ordinance (from now on, "the Ordinance")^[31].

The authorisation to conduct or initiate any space activity under the Liechtenstein jurisdiction shall be granted if the operator has fulfilled the following requirements:

1. the operator and its governing bodies and key personnel have the professional qualifications and personal integrity required to conduct a space activity;
2. the operator is financially capable and has a cost and financing plan for the space activity;
3. the space activity is conducted in accordance with the state-of-the-art technology and does not pose an immediate threat to public order, the safety of individuals and property, or health;
4. the space activity is following the obligations under international law and the foreign policy interests of the Principality of Liechtenstein;
5. the space activity does not pose a threat to the national security of the Principality of Liechtenstein;
6. the space activity does not cause harmful contamination of outer space,

including celestial bodies, or harmful alteration of the environment on Earth;

7. adequate measures have been taken to prevent space debris, in particular mission debris;
8. the operator complies with the requirements of the International Telecommunication Union and telecommunications legislation with regard to frequencies and orbital position;
9. the operator complies, with regard to export control, with the Swiss legal provisions applicable in the Principality of Liechtenstein under the Customs Treaty, in particular with the Swiss legislation on arms, goods control and weapons;
10. the operator has obtained mandatory insurance to cover the risks (see below).

Further, the Space Act has also introduced several “innovations” with respect to the authorisation of those space activities which are of research character. (i) Firstly, space activities limited to producing mission data and relaying that data back to Earth (“payload system”) are exempted from the authorisation requirement. This will apply, for example, to research objects under Liechtenstein’s jurisdiction^[32]. With respect to these space activities, a notification requirement (*Anzeigepflicht*) is being used. The reason behind this exemption from the general requirement of authorisation is the low-risk nature of these space activities. (ii) In order to obtain authorisation, the operator is obliged to provide that he has obtained insurance to cover his liability under the Space Act. At the same time, the Space Act provides that space activities serving science, research, or education could be exempted from the insurance obligation^[33]. In this respect, the Ordinance provides^[34] that if such exemption from insurance obligation exists (*sofern eine Befreiung von der Versicherungspflicht gewährt wurde*), the operator must not provide for any insurance when applying for authorisation. In this respect, one may argue that while the new space legislation in Liechtenstein aims primarily for commercial space activities, it also provides an environment for support of space research.

The Space Act also reflects the realities of the New Space Era and the gradual emergence of national space legislation. Therefore, a “conflict-of-law” rule was

introduced to address the situation; foreign law was applied *vis-à-vis* the subject under Liechtenstein's personal jurisdiction^[35]. In this respect, the Space Act provides that when space activities have already been approved and supervised by another state, they are also exempted from the authorisation requirement^[36]. In this case, a mere notification requirement is provided, too. In this respect, the Ordinance requires^[37] that proof of approval and supervision by another state be provided to the Supervisory Authority in this situation. The introduction of this *conflict-of-law* rule into the space legislation represents a significant step towards the future, where the circulation of operators among various jurisdictions is to be highly expected^[38]. The fact is that any similar provision is missing in most of the currently existing national space acts. In the EU, this is partly due to expectations that a future EU Space Act will govern the transboundary issues in space authorisation in the form of a regulation^[39]. A salient exception is being present in the Portuguese space legislation. The Portuguese Space Act provides^[40] that the requirement for an authorisation can be waived when the following two conditions are met: (i) the operator obtained the required authorisations pursuant to the law applicable in other states and (b) an agreement that ensures compliance with international obligations must be concluded between this state and the Portuguese Republic. This scheme relieves the Portuguese operators of the authorisation obligation if the authorisation has been obtained abroad under the same conditions as the Portuguese Space Act provides^[41]. Thus, this "conflict-of-law" rule aims to relieve the operators under the personal jurisdiction of Portugal from unnecessary burden. At the same time, the "conflict-of-law" rule seeks to guarantee compliance with Portugal's obligations, which arise from international conventions. In contrast, the "conflict-of-law" rule, as adopted quite recently in the Liechtenstein space law, does not foresee any agreement between the state that issues the authorisation of the Principality of Liechtenstein. This regulation will undeniably contribute to the free movement of Liechtenstein operators. At the same time, however, the question may arise of whether Liechtenstein will still be able to guarantee that all subjects under its jurisdiction comply with international law.

Lastly, the Space Act also provides rules for modifying or revoking the authorisation^[42], executing supervision by the Supervisory Authority^[43] and penal provisions^[44].

4. Prevention of damages

The Space Act declares at its very beginning that one of its primary purposes is to «*prevent damage caused by space objects for which Liechtenstein may be held internationally liable*»^[45]. With this, the Space Act reflects the obligations of the Principality of Liechtenstein arising from the Liability Convention. This Convention provides that liability for damages caused by space activities is directly linked to the launching State^[46]. Consequently, without any special measures taken, any authorisation of space activities by the competent Liechtenstein authority would constitute a potential risk that the Principality could be held liable for damages caused by the activities authorised. While Liechtenstein aims to attract prospective space enterprises into its jurisdiction, the Principality aims simultaneously to minimise any damages potentially arising from the space activities. One may recall that this intention was also one of the main reasons for adopting the General Act on Space Activities in the Grand Duchy of Luxembourg (in 2020)^[47].

In this respect, the Space Act aims to prevent damages by introducing the following mechanisms: (i) Firstly, a transparent framework for liability and mandatory insurance is provided. This framework guarantees that the duty of compensation will accompany each damage. (ii) Secondly, control over the operators is strictly supervised to guarantee their financial stability.

4.1. Liability for damages, mandatory insurance and the right of recourse

The Liability Convention generally links any liability for damages occurring because of space activities to the launching State. In this respect, however, two different regimes of liability are being distinguished by the provisions of the Convention: (i) Firstly, the Liability Convention provides^[48] that a launching State «*shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the earth or to aircraft flight*». (ii) Secondly, the Convention further provides^[49] that in the event of damage being caused elsewhere than on the surface of the earth *to a «space object of one launching State or persons or property on board such a space object by a space object of another*

launching State, the latter shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible». The first regime is based on absolute liability, which means liability without intent or negligence. This regime aims to protect potential victims on the earth or travelling in an aircraft – in principle, third persons not involved in the space industry. On the other hand, the second liability regime applies in principle *vis-à-vis* third persons who are actively engaged in the space industry. Therefore, the Liability Convention uses the regime of liability based on fault^[50].

Like the space legislation adopted recently in other countries of Europe^[51], the Space Act also provides for the channelling of absolute liability towards the operator. In this respect, the Act provides^[52] that «*the operator is liable for any damage caused by a space object on Earth or to an aircraft in flight as a result of the space activity*». Thus, the Space Act has copy-and-pasted the wording of the Liability Convention and channelled the absolute liability towards the operator. Therefore, the Space Act provides for a direct link between the authorisation and the liability of the authorisation holder (operator) for damages.

The impact of this link between the authorisation and the liability of the licenced person is twofold: (i) Firstly, under the Space Act, the operator is liable for damages caused by a space object on Earth or to an aircraft in flight because of the space activity. This liability's nature is absolute, meaning neither intention nor operators' negligence is required. (ii) Secondly, the operator shall obtain insurance coverage from an insurance company to cover its liability for personal injury or property damage that may arise to third parties due to space activity^[53]. At the same time, the Space Act explicitly states that insurance must cover at least 100 million Swiss francs^[54].

Concerning mandatory insurance, several innovations have been introduced by the new Liechtenstein legislation. In this respect, the Space Act provides^[55] that the Supervisory Authority may, upon request, grant an exemption from the insurance requirement or a reduction in the insurance amount. Such exemption could be approved in the cases of (i) public interest in the space activity^[56] and (ii) when the operator can demonstrate that it has the bank guarantee to cover its liability for personal injury or property damage^[57]. At the same time, the Space Act provides that space activities serving science, research, or education are considered to be in the public interest^[58]. Thus, while the new Liechtenstein

legislation primarily addresses commercial space activities, it also supports space science, research, and education by possibly exempting these activities from mandatory insurance or reducing the amount of insurance. Portuguese space legislation introduced a similar innovatory provision concerning scientific, R&D, educational or training purposes or low-risk operations^[59].

Further, the Space Act provides for a right of recourse (*Rückgriff*) of the Principality of Liechtenstein^[60]. This right shall be used if Liechtenstein has compensated an injured party for damage caused by a space activity based on obligations under the Liability Convention. These obligations were already outlined above. This mechanism deserves two comparative remarks: (i) Firstly, the right of recourse of the launching State has been introduced in the majority of the recently adopted national space acts in Europe^[61]. One may argue that it represents a vital instrument of the national space legislation, addressing the liability issue for space activities^[62]. It reflects that while the absolute liability has been channelled to the operator by the national legislation, the obligations of States arising from international conventions still exist. (ii) Secondly, the approach of national space acts to the amount of the recourse varies. For example, Portuguese legislation provides for a recourse right, which is limited in amount. Under its national legislation, the Portuguese Republic can use its right of recourse up to the limits provided for in an administrative rule to be approved by members of the Government in charge of the finance, science, and technology areas. However, this shall not apply where the damage has been caused by intentional fault, serious operator misconduct, or a severe breach of obligations imposed by the authorisation. In these cases, the recourse right of the Portuguese Republic will have no financial limitation^[63]. The recently adopted Cypriot Space Act has also limited the right of recourse^[64]. It provides that the Republic of Cyprus shall have the right to present a claim for indemnification to the authorised operator, which may be up to sixty million euros (€ 60.000.000). At the same time, the Cypriot Space Act also provides^[65] that the amount of the indemnification in favour of the Republic of Cyprus may exceed the amount of sixty million euros. This will apply in cases of authorisation violation on the side of the operator, violation of the Cypriot Space Act, or high-risk space activities. On the other hand, the General Act on Space Activities of the Grand Duchy of Luxembourg does not provide for any limitation on the right of recourse of the

Grand Duchy. As the Explanatory Memorandum reveals, drafting the new Liechtenstein Space Act was mainly influenced by the wording of the General Act on Space Activities^[66]. Therefore, the Principality of Liechtenstein has been provided with an unlimited right of recourse against the operator by the Space Act.

4.2. Change of control of the operator

The provisions of the Space Act, addressing the change of control of the operator (*Änderung der Kontrolle des Betreibers*), represent another measure to prevent potential damages. These provisions reflect the gradually globalised nature of the space industry and the interest of the Principality of Liechtenstein in having information on the identity of each operator that exercises space activities under the jurisdiction of the Principality^[67]. In particular, due to the obligations arising to the Principality of Liechtenstein from the Liability Convention, there was a need to guarantee that only experienced and financially stable companies were conducting space activities. Thus, the Space Act has introduced a notification obligation regarding any intended direct or indirect acquisition and any intended direct or indirect disposition of a qualified ownership in an operator^[68]. The Supervisory Authority shall examine the reliability of the interested acquirer and the financial soundness of the intended acquisition. In this respect, the interest of sound and prudent management of the interested acquirer and the likely influence of the interested acquirer on the operator are to be considered^[69]. If facts and events suggest that an interested acquirer does not meet the requirements of sound and prudent management, the Supervisory Authority may object to the change of control. In this respect, the Space Act declares any civil transactions which occur despite the objection of the Supervisory Authority as void. The Explanatory Memorandum reveals^[70] that the whole conception of these provisions was influenced by the framework already applicable under the General Act on Space Activities in the Grand Duchy of Luxembourg^[71]. Consequently, the newly adopted Liechtenstein regulation in this field may serve as another example of cross-fertilisation between various space legislations in Europe.

5. Registration of space objects

The Registration Convention provides in its Article II that «*when a space object is launched into earth orbit or beyond, the launching State shall register the space object by means of an entry in an appropriate registry which it shall maintain*». This obligation has been reflected in the Space Law by establishing a national registry of space objects (*Register für Weltraumgegenstände*)^[72]. The Supervisory Authority shall keep the national registry. The Supervisory Authority shall also take the necessary actions for the Principality of Liechtenstein, as a launching State, to furnish to the Secretary-General of the United Nations all the information relating to space objects carried on the national registry, as envisaged by the relevant provisions of the Registration Convention^[73].

In line with the obligations arising from international law, the Space Act explicitly declares^[74] that a space object to be registered in this register and its entire personnel shall be subject to the jurisdiction and control of Liechtenstein during its presence in space or on a celestial body. With respect to this tenet, the Space Act also provides rules applicable to a change of operator^[75]. In the case that the acquiring operator is under the jurisdiction of a third state, such change can only occur if an agreement has been adopted between the Principality of Liechtenstein and the third state^[76]. The Principality of Liechtenstein will allow such a change only if the respective agreement provides for the transfer of liability and registration obligation to the acquiring operator's home state. Otherwise, the Principality of Liechtenstein will risk that it will lose control over the space object, but the international liability and registration obligation will remain^[77]. By this mechanism, a change of operator is always accompanied by a transfer of liability and registration^[78].

6. Conclusions

By adopting its own Space Act, the tiny landlocked Principality of Liechtenstein has joined a growing number of countries in national space legislation. The newly adopted legislation aims to establish a transparent, predictable and competitive framework for space activities. Under the situation, any similar framework is missing in the Federal Republic of Germany, Switzerland and Italy;

establishing a framework for the authorisation of space activities in Liechtenstein may indeed attract space entrepreneurs, innovators and start-ups into its jurisdiction. One may argue that the recent adoption of this new legislation underlined the importance of the space sector and the industrial branch of the future.

Having said this, the Space Act of the Principality of Liechtenstein is also of interest from a legal perspective. It represents a transparent and relatively uncomplicated piece of legislation consisting of 29 Articles altogether. While primarily oriented on commercial space activities, it also provides rules that support space research. Further, the Space Act also provides for regulations reflecting prospective transboundary activities of space operators – either by obtaining authorisations abroad or by transferring ownership to the space objects. While most of the recent national space acts project a unilateral perspective of reality into the national legislation, the Liechtenstein approach seems to be more accepting of the existence and future emergence of other national space legislations. Lastly, from a theoretical perspective, the content of the newly adopted Liechtenstein legislation represents a salient example of cross-fertilisation between the space legislations in Europe. In particular, the influence of the Luxembourgish space legislation seems to be decisive. This underlines the argument that even a small state may gain influence when it adopts quality legislation in a field which is emerging.

1. Gesetz vom 5 Oktober 2023 über die Genehmigung von Weltraumaktivitäten und die Registrierung von Weltraumgegenständen (Weltraumgesetz) [Act of 5 October 2023 on the authorisation of space activities and the registration of space objects (Space Act)].
2. Jahrgang 2023, Nr. 443. This article uses the unofficial English translation of the Space Act, as published in the Liechtenstein Law Gazette. For clarity, the primary legal terms are also being referred to in German.
3. Space Act, Article 29.
4. For a much broader perspective of Liechtensteins stance towards international law, see D. Thürer, *Liechtenstein und die Völkerrechtsordnung*, in *Archiv des Völkerrechts*, 36, 1998, at pp. 98-127.
5. See D. Ignatius, *In fight over satellite array, tiny Liechtenstein roars back at China* in *The Washington Post*, 27 September 2023.
6. Bericht und Antrag der Regierung an den Landtag des Fürstentums Liechtenstein betreffend den Erlass eines Gesetzes über die Genehmigung von Weltraumaktivitäten und

die Registrierung von Weltraumgegenständen (Weltraumgesetz; WRG) sowie die Abänderung des Beschwerdekommmissionsgesetzes [Report and Proposal of the Government to the Parliament of the Principality of Liechtenstein concerning Adoption of the Act on the Authorization of Space Activities and the Registration of Space Objects (Space Act) and on Amendment of the Act on Appeal Committees], Vaduz, 3rd April 2023, LNR 2023-432, at pp. 8-9.

7. Convention on International Liability for Damage Caused by Space Objects (adopted 29 March 1972, entered into force 1 September 1972) 961 UNTS 187.
8. Liability Convention, Article II.
9. Space Act, Article 1 in fine.
10. Convention on Registration of Objects Launched into Outer Space (adopted 12 November 1974, entered into force 15 September 1976) 1023 UNTS 15.
11. See M. Passamonti, *Small states in outer space: Monaco's ambitions for the NewSpace age in Space News* (18 October 2021).
12. See M. Serrer, *How Luxembourg becomes Europe's commercial space exploration hub*, in *Annales des Mines – Réalités industrielles*, 2, 2019, at pp. 69-72.
13. See L. Lit Xian Ho, *Singapore, a Sustained Ambition Towards a Commercial Space Sector* in Q. Verspieren, M. Berthet, G. Coral, S. Nakasuka, H. Shiroyama (eds), *ASEAN Space Programmes. History and Way Forward*, Springer, Vienna, 2022, at pp. 79-100.
14. *Le Bureau des Affaires Spatiales*.
15. M. Waters, *Small States in Space: Space Club Relevancy and National Interest Influence in Journal of Indo-Pacific Affairs*, May-June, 2023, at p. 36.
16. See T. Stellpflug, *How a small state is outshining the German Federal Government – Liechtenstein's new space law in Taylor Wessing News*, 13 December 2023.
17. Space Act, Article 3. a.
18. Ibid, Article 3.a.3.
19. Explanatory Memorandum, at p. 25.
20. See Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, Article 5 (States bear international responsibility for national activities in outer space, whether carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried on in conformity with the principles set forth in the present Declaration. The activities of non-governmental entities in outer space shall require authorisation and continuing supervision by the State concerned. When activities are carried out in outer space by an international organisation, responsibility for compliance with the principles set forth in this Declaration shall be borne by the international organisation and by the States participating in it). Also see F. G. von der Dunk, *The Origins of Authorisation: Article VI of the Outer Space Treaty and International Space Law*, in F. G. von der Dunk (ed), *National Space Legislation in Europe*, Brill, Leiden, 2011, at pp. 3-28.
21. Space Act, Article 2.1.a.
22. Ibid, Article 2.1.b.

23. Ibid, Article 2.1.c.1.
24. Ibid, Article 2.1.c.2.
25. The Space Act provides in Article 28 that in such a case, the authorisation requirements shall be replaced by a notification requirement. Within three months of the Space Act's entry into force, the operator shall submit to the Supervisory Authority all documents enabling verification of the existence of the requirements for authorisation of space activities.
26. Space Act, Article 1.2.
27. See above, *supra* 20.
28. See Space Act, Article 3.1.c. (An operator is a natural or legal person conducting or initiating space activities).
29. Ibid, Article 4.1.
30. The Office for Communications (*Amt für Kommunikation*) acts as the Supervisory Authority under the Space Act.
31. *Verordnung vom 4. Dezember 2023 über die Genehmigung von Weltraumaktivitäten und die Registrierung von Weltraumgegenständen (Weltraumverordnung; WRV)* [Ordinance dated 4 th December 2023 on the Authorization of Space Activities and the Registration of Space Objects (Space Ordinance)].
32. See Explanatory Memorandum, at p. 34.
33. Space Act, Article 8.2.a.
34. Ordinance, Article 4.1.k.
35. Space Act, Articles 2.1.c.1. and 2.1.c.2.
36. Ibid, Article 6. a.
37. Ordinance, Article 5.1.b.
38. See C. Clerc, *Towards a new legal ecosystem for the exploitation of space*, in L. Smith, I Baumann, S. Wintermuth (eds), *Routledge Handbook of Commercial Space Law*, Routledge, London, 2023, at pp. 5-23.
39. See A. Sandulli, *The Growth of Space Regulation in Europe*, in *EU Law Live Weekend Edition*, 165, 2023, at pp. 3-5.
40. See *Decreto-Lei n.º 16/2019, de 22 de janeiro*, Article 4.3.
41. See J. Handrlica, *The Advent of Space Administrative Law in Europe*, in *Acta Universitatis Carolinae Iuridica*, 2, 2024, at p. 125.
42. Space Act, Article 11.
43. Ibid, Article 19.
44. Ibid, Articles 24-26.
45. Ibid, Article 1 in fine.
46. Liability Convention, Article II, and Article III. In this respect, the Liability Convention provides in its Article I that “launching State” means both (i) a State that launches or procures the launching of a space object and (ii) a State from whose territory or facility a space object is launched.
47. See M. Hofmann, *Entered into Force: The 2020 Space Law of Luxembourg* in *Air and Space*

- Law*, 4/5, 2021, at pp. 588-89.
48. Liability Convention, Article II.
 49. Ibid, Article III.
 50. See F. G. von der Dunk, *Advanced Introduction to Space Law*, Edward Elgar, Cheltenham, 2020, at p. 29.
 51. See, for example, in the Grand Duchy of Luxembourg (*Loi du 15 décembre 2020 portant sur les activités spatiales*, Article 4).
 52. Space Act, Article 7.1.
 53. Ibid, Article 8.1.
 54. Ibid.
 55. Ibid, Article 8.2.
 56. Ibid, Article 8.2.a.
 57. Ibid, Article 8.2.b.
 58. Ibid, Article 8.3.
 59. See Decreto-Lei n.º 16/2019, de 22 de janeiro, Article 8.4.
 60. Space Act, Article 9.
 61. See, for example, Portugal (*Decreto-Lei n.º 16/2019, de 22 de janeiro*, Article 18.2.), Slovenia (*Zakon o vesoljskih dejavnostih*, Article 16.3.) and most recently Cyprus (Ο περί Διαστήματος Νόμος του 2023 (N. 93(I)/2023, Article 10.3).
 62. See J. Handrlica, *The Advent of Space Administrative law in Europe*, at p. 125.
 63. See Decreto-Lei n.º 16/2019, de 22 de janeiro, Article 18.3.
 64. See Ο περί Διαστήματος Νόμος του 2023 (N. 93(I)/2023), Article 10.3.
 65. Ibid, Article 10.4.
 66. Explanatory Memorandum, at p. 39.
 67. Ibid, at p. 45.
 68. Space Act, Articles 13.1.
 69. Ibid, Article 13.3.
 70. Ibid.
 71. However, Liechtenstein didn't implement the provisions of the General Act on Space Activities in the Grand Duchy of Luxembourg literally. For example, while the General Act provides in its Article 13 that acts of a civil nature, being contrary to the objection of the competent authority, are void only if the authority inquires so, the Liechtenstein legislation opted for invalidity *ex lege*.
 72. Space Act, Articles 14-15.
 73. Ibid, Article 15.3.
 74. Ibid, Article 14.4.
 75. Ibid, Article 12.
 76. Ibid, Article 12.4.
 77. Explanatory Memorandum, at pp. 44-45.
 78. See S. Hobe, B. Schmidt-Tedd, K. Schrogl (eds), *Cologne Commentary on Space Law, Volume I*, Carl Heymanns Verlag, Cologne, 2009, at pp. 155-156.

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