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New Space, New Challenges: Nationality in Space Law

INTRODUCTION

The term nationality expresses the idea of belonging to a state in international law both for natural persons, and for legal persons (or in the wording of the Liability Convention, juridical persons) or objects. At the same time, not all languages distinguish between the terms citizenship and nationality. In those languages which mark this duality, the terms nationality and nationalité are used for this legal bond in international law, while citizenship, citoyenneté in domestic law, can be traced back to the historical roots of the etymology of the words.[1]

The issue of nationality in space law has acquired importance in many ways in recent times. In the more than sixty-year history of the use of outer space, the total number of space objects launched into Earth orbit has almost tripled in the last fifteen years, and the number in low Earth orbit has increased tenfold in the last eight years alone.[2] The nationality of space objects is becoming increasingly important because, in times of mass launches, space object registration is not always fully implemented. Only 87%[3] of the manmade objects in space are registered, which has several consequences, including responsibility and liability issues, space traffic management, space debris identification and mitigation. In recent years, space activities have been increasingly carried out

[1] Koessler 1946–1947: 62–67; Ganczer 2013: 49–54.
[2] European Space Agency, ESA's Annual Space Environment Report, 2023, 4.
[3] United Nations Office for Outer Space Affairs, United Nations Register of Objects Launched into Outer Space.

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by non-governmental entities, which calls for an examination of the issue of the nationality of legal entities. In 2023, non-governmental entities, rather than states, accounted for more than three quarters of the $546 billion annual space economy.[4] At the time of adoption of the major international treaties of space law, it had not been foreseen that the participation of non-governmental entities would be on such a scale. Nevertheless, legal entities in space activities were taken into account when these treaties were drafted. Current legislation must therefore be reconsidered and revised to ensure the effective implementation of space law and to ensure the safety of space activities more reliably.

NATIONALITY OF SPACE OBJECTS

The term "nationality" refers not only to natural and juridical persons but also to ships, aircraft and space objects, which also means that they belong to a state. The practice of both air law and maritime law had already been established by the time space was first regulated and served as a model for regulating the nationality of space objects. Nationality in the international legal regulation of air law is based on the registration of aircraft.[5] The 1944 Convention on International Civil Aviation states that "[a]ircraft have the nationality of the State in which they are registered",[6] irrespective of the owner of the aircraft, the headquarter of the owner or the nationality of the pilot.[7] There is also a prohibition of dual nationality,[8] although the registry of an aircraft may be

4 See Space Foundation at https://www.spacefoundation.org/2023/07/25/the-space-report-2023-q2/.

5 Convention Relating to the Regulation of Aerial Navigation, Paris, 13 October 1919, Article 6; Pan American Convention on Commercial Aviation, Havana, 20 February 1928, Article 7.

6 Convention on International Civil Aviation (hereinafter: Chicago Convention), Chicago, 7 December 1944, Article 17.

7 Sipos 2018: 103.

8 Convention Relating to the Regulation of Aerial Navigation, Article 8; Pan American Convention on Commercial Aviation, Article 7; Chicago Convention, Article 18.

transferred from one state to another.[9] States also register ships and grant them the right to fly their flag. Under the treaties of the law of the sea, flying the flag of a state determines which state a ship belongs to. There is also an established rule that the nationality of a ship requires the existence of a genuine link between the ship and the state,[10] a requirement that has not been established in space law. The International Tribunal for the Law of the Sea held that the requirement of a genuine link ensures more effective implementation of the obligations of the flag state; however, in the absence of a genuine link, other states do not have the right to refuse to recognise the nationality of the ship.[11] Dual nationality is also prohibited for ships, and a ship flying the flag of two or more states should be considered as not having nationality.[12] Ships may not change their flag during a voyage or while in a port of call unless there is an actual transfer of ownership or change of registry.[13]

The nationality of space objects is that of their state of registry, i.e. the state which performs the registration.[14] The purpose of registration is to ensure retention of "jurisdiction and control" over the space object and its crew by the state of registry.[15] The term "space object" itself is defined in the treaties as

9 Chicago Convention, Article 18.

10 Convention on the High Seas, Geneva, 29 April 1958, 450 UNTS 11, Article 5 (1); United Nations Convention on the Law of the Sea (hereinafter: UNCLOS), Montego Bay, 10 December 1982, 1833 UNTS 397, Article 91 (1).

11 M/V "SAIGA" (No. 2) (Saint Vincent and the Grenadines v. Guinea), Judgment of 1 July 1999, ITLOS Reports 1999, 42.

12 Convention on the High Seas, Article 6; UNCLOS, Article 92.

13 Convention on the High Seas, Article 6 (1); UNCLOS, Article 92 (1).

14 Lopez-Gutierrez 1966: 132–142. Convention on the Registration of Objects Launched into Outer Space (hereinafter: Registration Convention), New York, 12 November 1974, 1023 UNTS 15, Article II (2).

15 Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, G.A. Res. 1962, 13 December 1963, para. 7, 18 U.N. GAOR Suppl. No. 15 (A/5515), 15, U.N. Doc. A/RES/18/1962 (1963); Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (hereinafter: Outer Space Treaty), London, Moscow, Washington, 27 January 1967, 610 UNTS 205, Article VIII; Registration Convention, Article II (2); Schmidt-Tedd – Soucek 2020. The term "jurisdiction and control" is also used in the

"component parts of a space object as well as its launch vehicle and the parts thereof",[16] and the jurisprudential definition clarifies that this includes objects launched and intended to be launched into outer space.[17]

Several international documents stipulate that registration must be carried out by a launching state,[18] a rule which has become part of customary international law.[19] The importance and the method of registration were mentioned as early as in the UN General Assembly Resolution No. 1721 of 1961.[20] The 1974 Convention on Registration of Objects Launched into Outer Space required the launching State to establish an appropriate registry and to provide the Secretary-General of the United Nations with information specified in the Convention and inform them of any changes to that information.[21] Accordingly, the United Nations Office for Outer Space Affairs maintain registrations under both the General Assembly resolution and the Registration Convention, in parallel.[22] In addition, UN General Assembly Resolution No. 62/101, adopted in 2007, sets out detailed recommendations[23] and the

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Moon Agreement. Agreement governing the Activities of States on the Moon and Other Celestial Bodies (hereinafter: Moon Agreement), New York, 5 December 1979, 1363 UNTS 3, Article 12 (1).

16 Convention on International Liability for Damage Caused by Space Objects (hereinafter: Liability Convention), London, Moscow, Washington, 29 March 1972, 961 UNTS 187, Article I (2) (d); Registration Convention, Article I (b).

17 Hobe et al. 2013: 504.

18 International Co-Operation in the Peaceful Uses of Outer Space, G.A. Res. 1721 B (XVI), 20 December 1961, para. B 1, 16 U.N. GAOR Suppl. No. 17 (A/5100), 6, U.N. Doc. A/AC.105/1154 (1961); Outer Space Treaty, Article VIII; Registration Convention, Article II (1).

19 For more information see Schmidt-Tedd – Soucek 2020: 16.

20 International Co-Operation in the Peaceful Uses of Outer Space, G.A. Res. 1721 B (XVI), 20 December 1961, para. B 1–2, 16 U.N. GAOR Suppl. No. 17 (A/5100), 6, U.N. Doc. *A/AC*.105/1154 (1961).

21 Registration Convention, Articles II–IV.

22 Sulyok 2022: 97.

23 Recommendations on Enhancing the Practice of States and International Intergovernmental Organizations in Registering Space Objects, G.A. Res. 62/101, 17 December 2007, 62 U.N. GAOR Suppl. No. 49 (A/62/49 Vol. I), 161, U.N. Doc. A/RES/62/101 (2007).

resulting registration form, which has been in use since 2010, has also been an important step forward in the process of data harmonisation.

The launching state itself means "(i) [a] [s]tate which launches or procures the launching of a space object; (ii) [a] [s]tate from whose territory or facility a space object is launched".[24] Similarly to the situation in air law, the state of registry is not necessarily the same as the owner of the space object, and it is therefore not identical to the owner, to the state or to the non-governmental entity which carries out the related space activities,[25] and thus to any changes to these.[26] The latter changes are only reported to the UN Secretary-General when "additional information" is provided.[27]

In case of a single launching state, it is obvious that the registration will be carried out by that state, so the space object will be a national of that state. If the space object has more than one launching State, they must jointly determine which of them will register it, i.e. only one of them can register the space object concerned. Thus, double registration – and double nationality – is impossible, similarly to the registration of aircraft.[28] The registration can be transferred to another state, but the new registrant can only be another launching state,[29]

[24] Liability Convention, Article I (c); Registration Convention, Article I (a). The definitions in the regulations are preceded by the Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, G.A. Res. 1962, 13 December 1963, para. 8, 18 U.N. GAOR Suppl. No. 15 (A/5515), 15, U.N. Doc. A/RES/18/1962 (1963); Outer Space Treaty, Article VII.

[25] Outer Space Treaty, Article VI. Recommendations on Enhancing the Practice of States and International Intergovernmental Organizations in Registering Space Objects, G.A. Res. 62/101, 17 December 2007, Recommendation 4, 62 U.N. GAOR Suppl. No. 49 (A/62/49 Vol. I), 161, U.N. Doc. A/RES/62/101 (2007).

[26] Aoki 2020: 392–398.

[27] Registration Convention, Article IV (2).

[28] Registration Convention, Article II (2). See also Recommendations on Enhancing the Practice of States and International Intergovernmental Organizations in Registering Space Objects, G.A. Res. 62/101, 17 December 2007, Recommendation 3.(b)–(c), 62 U.N. GAOR Suppl. No. 49 (A/62/49 Vol. I), 161, U.N. Doc. A/RES/62/101 (2007). Application of the concept of the "launching State", G.A. Res. 59/115, 10 December 2004, para. 2, 59 U.N. GAOR Suppl. No. 49 (A/59/49 Vol. I), 163, U.N. Doc. A/RES/59/115 (2004).

[29] Hobe et al. 2013: 256.

which will also be relevant for the change of ownership explained below. It is worth noting that for an international space station made up of several modules, the launching state of the given module is the state of registry. Under the terms of the relevant international treaty, the jurisdiction and control of the module is exercised by the state of registry, although the jurisdiction and control of the personnel is exercised by the state of nationality of each of the individual crewmembers.[30] It is also interesting to note that registration can be carried out not only by a state, but also by an international organisation, which means that the "launching state", and therefore the "state of nationality" of the space object, will in fact be an international organisation rather than a state. This is possible by means of a declaration of acceptance of the Convention on Registration of Objects Launched into Outer Space by the international organisation in question,[31] which shall then establish a registry under the convention. One such example is the registry of the European Space Agency, which usually indicates the international organisation itself as the "launching State" of space objects launched by the European Space Agency.[32] Looking at the registration documents, the European Space Agency used the term "launching authority" until 2010 and "state of registry" from 2011 for the registration of space objects launched by the Agency,[33] a change of terminology which can be explained by the UNOOSA registration form introduced in 2010.[34]

[30] Agreement Among the Government of Canada, Governments of Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America Concerning Cooperation on the Civil International Space Station, Washington, 29 January 1998, Article 5.

[31] Registration Convention, Article VII.

[32] For more on this see UN Committee on the Peaceful Uses of Outer Space, Space Object Registration by the European Space Agency: Current Policy and Practice, 13 April 2015, A/AC.105/C.2/2015/CRP.18.

[33] For registration documents, see Notifications from States and Organizations: European Space Agency (ESA) at https://www.unoosa.org/oosa/en/spaceobjectregister/submissions/esa.html.

[34] See UNOOSA, Registration Information Submission Form (as at 1 January 2010). The current form is applicable from 2020.

In case of damage caused by a space object during space activities, the question is whether the nationality of the space object is relevant, i.e. whether or not there is any link of liability to the state of registry. Essentially, the answer is no, since the liability rules of space law demonstrate that liability is not linked to nationality but to the launching state.[35] This is also confirmed by the fact that if the space object is not registered and its nationality is not clear,[36] liability will still be established. Even so, the launching state can be identified and must be proved. Finally, the state from whose territory the space object was launched is usually clear for all space objects, and this state can also be qualified as the launching state. The liability of the launching state is clearly established by the 1971 Convention on International Liability for Damage Caused by Space Objects,[37] but an international agreement under Article XXIII of the convention may make an exception.[38] It may happen that a state which is considered to be a launching state under the Liability Convention may not be listed as such in the registration, nor is the liability of that state excluded by an international agreement. In such cases, the applicability of the Liability Convention and the liability of the launching state should not be affected by the inaccurate registration.

Liability is therefore not directly linked to registration, but it has a role to play, as follows. Registration may contribute to determining the liable state by making the launching state clear. If the space object has one launching state, it will be included in the registry and the state of nationality will be the same as the state that is liable for damages. Of course, it is the fact of launching that

[35] Outer Space Treaty, Article VII; Liability Convention, Articles II–XII.

[36] See more in Aoki 2020: 374, 387–388.

[37] Liability Convention, Article I (c) (2), Article V (3).

[38] Cf. Agreement between the Russian Federation and Republic of Kazakhstan on the basic principles and conditions of use of the Baikonur spaceport, Moscow, 28 March 1994; Agreement between the Russian Federation and Republic of Kazakhstan on the development of cooperation on the effective use of the Baikonur complex, Astana, 9 January 2004; Agreement between the Government of the French Republic and the European Space Agency on the launching site and associated installations of the Agency at the Guiana Space Centre (with annexes), 2560 UNTS 25.

establishes liability for damage, rather than the object's registration. In the event of a joint launch (by more than one state or one or more states and an international organisation), the prohibition of multiple registration means that the space object will bear the nationality of only one of the launchers. The nationality of the space object will be the registering launching state, although the registration will have to designate all the launching States.[39] However, the liability will not be that of the state of nationality but will become joint and several.[40]

A clear and coherent registry would therefore contribute not only to the identification, monitoring and tracking of space objects, but also to a better understanding of the liability issues related to them. In addition to the results achieved so far and the practices that have been established, another solution would be to create an obligation to register as a condition for launch. This could be regulated as a binding norm for states either by amending the 1974 Convention or as part of customary international law. Therefore, basic orbital parameters would have to be provided by the registering state as additional information after the launch. The problem of unregistered space objects could be resolved in this way, or at least it would mean that their number would not increase.

NATIONALITY OF THE ENTITY CAUSING DAMAGE

Nationality of non-governmental entities

In space law, space activities are increasingly carried out by non-governmental entities. At the time of the adoption of the five major international treaties on space law, space activities were still essentially state activities, but eventually

[39] Registration Convention, Article IV (1) (a).

[40] Liability Convention, Article V. See also Application of the concept of the "launching State", G.A. Res. 59/115, 10 December 2004, para. 2, 59 U.N. GAOR Suppl. No. 49 (A/59/49 (Vol. I), 163, U.N. Doc. A/RES/59/115 (2004).

non-governmental entities were considered, even if this led to considerable controversy.[41] A review of the forms of responsibility and liability for the activities of non-governmental entities is certainly necessary in today's changed circumstances. As noted in the introduction, more than three quarters of space activity in the global space economy are now in the hands of private operators.

The nationality of the entity causing damage is not relevant in the case of space activities carried out by clearly a state and/or an international organisation, which are subject to specific liability rules.[42] However, where a non-governmental entity conducts space activities, the nationality of the non-governmental entity and its role in determining the liable state should be examined. Non-governmental entities can be divided into two main categories: natural and juridical persons. The possibility of space activities being carried out by private individuals is unlikely to happen (it should be noted that this was once thought to be the case for non-governmental entities as a whole, and the space activities of juridical persons have superseded this idea). The nationality of natural persons is determined by the domestic legal rules on nationality of the state concerned, usually on the basis of the principles of *ius soli* or *ius sanguinis,* which are limited or restricted by the rules of international law on nationality in so far as the state concerned has undertaken international obligations.[43] Juridical persons also have nationality due to their belonging to a state. In the Barcelona Traction case, the International Court of Justice stressed in 1970 that the nationality of a company is based on a "close and permanent connection" with the State,[44] and "the traditional rule attributes

[41] The Soviet Union was explicitly opposed to the inclusion of non-governmental entities, and finally agreed to the U.S. proposal on the basis of the exclusivity of state responsibility. Diederiks-Verschoor – Gormley 1977: 129; Tatsuzawa 1988: 342.

[42] See Outer Space Treaty, Articles VI–VII; Liability Convention, Articles III–V; Moon Agreement, Article 14. See the International Organization's activities in outer space in Outer Space Treaty, Article VI, Article XIII; Liability Convention, Article XXII; Moon Agreement, Article 14.

[43] Ganczer 2013: 58–63.

[44] Case Concerning the Barcelona Traction. Light and Power Company, Limited (Belgium v. Spain), Second Phase, Judgment of 5 February 1970, I.C.J. Reports 1970, 42.

the right of diplomatic protection of a corporate entity to the State under the laws of which it is incorporated and in whose territory it has its registered office", and that these "two criteria have been confirmed by long practice and by numerous international instruments".[45] The principle of registration/incorporation reflects customary international law, and as such it was also included in the 2006 Draft Articles on Diplomatic Protection. Moreover, in this draft, nationality, for the purposes of diplomatic protection, means belonging to the state of incorporation. However, if the juridical person is controlled by nationals of another State or has no substantial business activity in the state of incorporation, and the seat of management and financial control is in another state, it will be regarded as a national of the latter state.[46] In space law, however, the transnational nature of the activity requires the consideration of other nationality principles.[47] UN General Assembly Resolution No. 68/74 includes, in the context of the nationality of juridical persons, the place of establishment, the place of registration and the seat on the territory as optional elements.[48]

In regulating the space activities of non-governmental entities, it is necessary to bear in mind that the nationality of a natural or a juridical person may be multiple or difficult to define. Dual or multiple nationality of natural persons may be more common nowadays, implying several states of nationality. In case of juridical persons, the State of registration and the State of incorporation may not be the same, or the State of incorporation may change over time, or the majority of investors may be nationals of another State, or the company may be a transnational company, which may make it difficult to define its nationality. It is also possible that a given space activity is carried out jointly by natural and/or juridical persons of different nationalities. It is therefore necessary

[45] Case Concerning the Barcelona Traction. Light and Power Company, Limited (Belgium v. Spain), Second Phase, Judgment of 5 February 1970, I.C.J. Reports 1970, 42.

[46] Draft Articles on Diplomatic Protection, 2006, Article 9.

[47] Herczeg 1968: 100–101.

[48] Recommendations on national legislation relevant to the peaceful exploration and use of outer space, G.A. Res. 68/74, 11 December 2013, para. 2, 68 U.N. GAOR Suppl. No. 49 (A/68/49 (Vol. I), 260, U.N. Doc. A/RES/68/74 (2013).

to examine whether liability is linked to nationality in the current space law, whether the current regime is appropriate and what form of responsibility and liability would be realistic and ideal for the future.

State responsibility for non-governmental entities

First and foremost, a distinction must be made between *international responsibility,* which may exist for wrongful acts, and *state liability* for damages, which may be the result of both wrongful and non-wrongful acts.[49] It should be noted that international responsibility also involves an obligation on the part of the infringing state to pay compensation.[50]

International responsibility

The first of the relevant documents to address state responsibility for space activities of non-governmental entities was UN General Assembly Resolution 1962 (XVIII),[51] the text of which was incorporated almost identically into the 1967 Outer Space Treaty. According to Article VI of the Outer Space Treaty:

> "States Parties to the Treaty shall bear international responsibility *for national activities* in outer space, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or by *non-governmental entities*, and for *assuring* that national activities are carried out *in conformity with* the provisions set forth in the present Treaty. The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require *authorization and continuing supervision by the appropriate State Party* to the Treaty. When activities are carried on in outer space, including the Moon and other celestial bodies, by an international organization, responsibility for

[49] For more information see Kecskés 2022: 132; Kis Kelemen 2023: 130.

[50] Abhijeet 2020: 358.

[51] Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, G.A. Res. 1962, 13 December 1963, para. 5, 18 U.N. GAOR Suppl. No. 15 (A/5515), 15, U.N. Doc. A/RES/18/1962 (1963).

> compliance with this Treaty shall be borne both by the international organization and by the States Parties to the Treaty participating in such organization."[52]

The Outer Space Treaty therefore establishes the responsibility of states for activities in outer space carried out by non-governmental entities. It should be noted that non-governmental entities include natural persons, juridical persons, universities and research institutes.[53] It is necessary to analyse whether their nationality or another characteristic constitutes the main criterion to define the responsible state for their activities.

The expression "national activities" in outer space can provide a guide to this. For the interpretation of this term, several possibilities should be considered. If we read Article VI as a whole, national activities can be used merely to distinguish it from *all activities … carried out by an international organisation,* listed in the third sentence.[54] A narrower meaning of national activity may be that of *activities carried out under the jurisdiction of a state,* which may include activities carried out within its territory under territorial jurisdiction, as well as activities carried out under personal jurisdiction by its nationals, regardless of them being within or outside its territory.[55] National activity, in an even narrower sense, may mean *activities carried out by nationals,* which may be linked to the fact that Article IX refers to space activities carried out by a state or by its nationals while mentioning potentially harmful interference with activities of other states.[56]

The broadest interpretation, that national activity means any activity not carried out by an international organisation, is problematic because it does not provide any guidance as to which state should be considered as conducting

[52] Outer Space Treaty, Article VI [emphasis added – M. G.].

[53] Hobe et al. 2013: 394.

[54] Hobe et al. 2013: 390–391.

[55] Brownlie 1983: 165. Not jurisdiction, but a specific link to the state, or the direction or influence of the state is mentioned by Cheng 1998: 26; Silvestrov 1991: 20; Lee 2005: 217.

[56] This interpretation is mentioned but disagreed with by Böckstiegel 1991: 13; Böckstiegel 1994: 77–78.

a "national activity" and would thus render the obligation meaningless. Indeed, an important element of the first sentence is that the state is not only responsible for these activities, but must also ensure that they "are carried out in conformity with the provisions set forth in the present Treaty".[57] The travaux préparatoires indicate that the aim of the provision was to ensure that all non-state space activities remained under state responsibility.[58] To make certain that this is done effectively and that states do not evade their obligations, it is necessary to define the state of national activity of each specific space activity more precisely. Responsibility for a space activity and the implementation of the provisions of the treaty can only be ensured if the state concerned is involved in some way and is able to have an impact on the activity in question. This interpretation can therefore be accepted if the term "the appropriate State Party" in the following sentence is taken to clarify the meaning of the national activity of non-governmental entities.

Employing the narrowest interpretation of national activities of non-governmental entities and considering only the activities of nationals as national activities, the distribution of responsibility between states is relatively clear, except for the possible disputes over the determination of the nationality of juridical persons, as mentioned above. However, it may be the case that the responsible state is not the state which is best placed to supervise the activity in question, for example in the case of multinational companies, foreign activities on the territory of the state, transfer of property, or joint activities by nationals of different states.

In today's space law, given the large number of non-governmental entities and their varying state identities, the best interpretation of national activity in the spirit of the drafters of the treaty and the principle of effectiveness[59] is to consider it an activity conducted under the jurisdiction of the state. This ensures that it is equally responsible for activities carried out on the territory and

[57] For more on this obligation see Abhijeet 2020: 359–362.

[58] Lachs 1972: 122.

[59] Vienna Convention on the Law of Treaties, Vienna, 23 May 1969, 1155 UNTS 331, Articles 31(1), 31(4).

quasi-territory of the state and for activities carried out by nationals (whether or not they are on the territory of the state). This, however, needs to be further examined in the light of the analysis of the term "appropriate State" in the second sentence.

In relation to the term "appropriate State", it should be noted that UN General Assembly Resolution 1962 (XVIII) still used the term the "State concerned",[60] which refers to the given state. The meaning of "appropriate State" is more nuanced, and may be interpreted as implying a particular quality of the state, carrying the connotation of the most adequate state for the given situation.

There are many interpretations of the term "appropriate state", and these sometimes overlap. These include 1. the elaboration of the state in the first sentence; 2. the registering state; 3. the launching state; 4. the owner of the space object; 5. the state of territorial jurisdiction; 6. the state of personal jurisdiction (state of nationality of a natural and juridical person); 7. a particular combination of these.[61] The primary wording of "appropriate State" may be interpreted as suggesting that there can be only one appropriate state, but the interpretation of the possibility of there being more than one appropriate state has gained acceptance.[62] The reality of space law today also requires this interpretation because of the complexity of space activities and the frequent occurrence of multiple state ownership. Article VI of the Outer Space Treaty requires "authorization and continuing supervision by the appropriate State Party", so the meaning of "appropriate state" needs to be understood in this context.

The fundamental question concerns which state is in a position to authorise and continuously supervise space activities carried out by non-governmental entities. The state of registry exercises jurisdiction and control over the space

[60] Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, G.A. Res. 1962, 13 December 1963, para. 5, 18 U.N. GAOR Suppl. No. 15 (A/5515), 15, U.N. Doc. A/RES/18/1962 (1963).

[61] See Silvestrov 1991: 327–330; Böckstiegel 1991: 77–79; Böckstiegel 1994: 13–15; Abhijeet 2020: 363–365; Hobe et al. 2013: 396–403; Cheng 1998: 26–29; Tatsuzawa 1988: 344; Lee 2005: 218–219; Vereshchetin 1983: 263.

[62] Cheng 1997: 609–610; Cheng 1998: 326, 328.

object and over any personnel thereof,[63] and this state can therefore be the appropriate state after launch (indeed, some argue that only the state of registry can be considered the appropriate state after launch).[64] However, the non-governmental entity operating the space object may not be under the jurisdiction of the state of registry, especially since it is not necessarily under its jurisdiction at the pre-launch stage. Similarly, if only the launching state is considered to be the appropriate state, some activities may remain uncontrolled, for example if the launching state is only the state from whose territory the space object was launched, but the activity prior to the launching was not under its jurisdiction. If only the state with territorial jurisdiction were the "appropriate state", that state would not be responsible for and would have no influence over the activities of its nationals if their activities were carried out in whole or in part outside its territory. Finally, if only the state of nationality was the "appropriate state", activities carried out on its territory by a foreign national would be outside the scope of its effective control.

All in all, the term "appropriate state" should be interpreted as involving activities under the jurisdiction of the state, which includes its territorial, quasi-territorial and personal jurisdiction, including, where appropriate, the jurisdiction of the registering state after launch. This interpretation allows for the activities of a non-governmental entity to be backed in all cases by a state, which was the intention of the law-maker. Therefore, with a proper interpretation, there is no need to change the existing rule. This also ensures that launching states can be considered the appropriate state if the activity is within their jurisdiction. Authorisation and continuing supervision can only be ensured by a state if its legal system can cover the activity concerned, for which jurisdiction of the state is essential.

A similar provision in the Moon Agreement and the UN General Assembly Resolution 68/74 is also worth recalling in this regard. The Moon Agreement is more precise than Article VI of the Outer Space Treaty, as Article 14(1) requires states parties to ensure that non-governmental entities "under their

[63] Outer Space Treaty, Article VIII.

[64] Silvestrov 1991: 328.

jurisdiction" carry out activities under the authority and continuing supervision of the appropriate state. Similarly, this concept of jurisdiction is reinforced by paragraph 2 of UN General Assembly Resolution 68/74. In relation to the obligations of launching states and of states responsible for national activities, the Resolution specifies that states "should ascertain national jurisdiction over space activities carried out from territory under its jurisdiction and/or control; likewise, it should issue authorizations for and ensure supervision over space activities carried out elsewhere by its citizens and/or legal persons".[65]

Neither the Outer Space Treaty nor the Moon Agreement contains an explicit and detailed definition of what exactly the obligation of authorisation and continuing supervision by the appropriate state involves. A state can therefore implement it in any way it chooses,[66] as long as it ensures appropriate authorisation and continuing supervision. In practice, this can be implemented either by adopting a domestic legal rule, by contracting with a non-governmental entity, or by means of an administrative act.[67] The practice of states shows that they are increasingly seeking to regulate the licencing of non-governmental entities and the implementation of continuing supervision in their domestic law through national space laws.[68] The domestic regulation of the space activities of non-governmental entities started in Norway in 1969.[69] In the domestic legislation on this area adopted by more than forty states today, it can be observed that there is still a lack of uniformity in practice as regards jurisdiction. While some states base their space law legislation on territorial jurisdiction only and others on personal jurisdiction only, in general, states tend to regulate space activities under both their territorial and personal jurisdiction.[70] A detailed

[65] Recommendations on national legislation relevant to the peaceful exploration and use of outer space, G.A. Res. 68/74, 11 December 2013, para. 2, 68 U.N. GAOR Suppl. No. 49 (A/68/49 (Vol. I), 260, U.N. Doc. A/RES/68/74 (2013).

[66] Similar views are expressed by Gál 2001: 62; Vereshchetin 1983: 263; von der Dunk 2019: 228; Masson-Zwaan 2008: 537.

[67] Abhijeet 2020: 371.

[68] Bartóki-Gönczy 2022: 255; von der Dunk 2019: 228; Masson-Zwaan 2008: 537.

[69] Bartóki-Gönczy 2020: 101.

[70] Lee 2005: 221–224; von der Dunk 2019: 231–236.

recommendation regarding domestic regulation is contained in UN General Assembly Resolution 68/74, the adoption of which as customary international law would encourage domestic regulation to ensure more effective application of international law. The resolution provides for a competent national authority for licensing, appropriate conditions and procedures for granting, modifying, suspending and revoking licences within a legal framework, different licencing and procedures for different space activities, and consistency with international law. To ensure continuing supervision, recommendations include appropriate procedures, monitoring of authorised space activities, including on-site inspections, general reporting system, enforcement mechanisms, and maintenance of a national registry by an appropriate authority. Continuing supervision should also be ensured in the event of a transfer of ownership or control of a space object in orbit, for which it is proposed that national legislation should require reauthorisation or notification of the change.[71]

Liability

In addition to the responsibility of states for space activities carried out by non-governmental entities under Article VI of the Outer Space Treaty, Article VII provides for the liability of launching states for damage. The whole Liability Convention also makes the launching state liable for all damage caused by the space object, i.e. the liability for the damage is always borne by the launching state. Therefore, the concept of the liability of states in all circumstances is also reflected here. It should be noted that, in case of other high-risk activities outside space law, the operator is liable for damage, whereas in space law the liability of the launching state has become general.[72]

It is necessary to establish which non-governmental entities the launching state is liable for. The definition of the launching state has already been discussed in

[71] Recommendations on national legislation relevant to the peaceful exploration and use of outer space, G.A. Res. 68/74, 11 December 2013, paras. 2–8, 68 U.N. GAOR Suppl. No. 49 (A/68/49 (Vol. I), 260, U.N. Doc. A/RES/68/74 (2013).

[72] Herczeg 1966: 90–91; Kecskés 2020: 130–133.

the section on the nationality of space objects. Thus, the basis for state liability for damage caused by a space object as a result of the activities of non-governmental entities in launching or procuring the launch of the space object or in using state territory or facilities for the launch should be analysed here.

Articles III and IV of the Liability Convention are worth emphasising for this analysis, which stipulate that "the damage is due to its fault or the fault of persons for whom it is responsible", and "their liability [...] shall be based on the fault of [...] persons for whom either is responsible". There is therefore a reference to the non-governmental entities for whom the launching state is liable, hence the phrase "persons for whom it is responsible" must be interpreted in relation to the Liability Convention as a whole. The term "persons" includes both natural and juridical persons, although the Liability Convention does not refer specifically to nationality but is more general in scope. It therefore covers not only personal jurisdiction but also territorial jurisdiction, irrespective of the nationality of the "person". The arguments mentioned earlier in relation to national activity and the appropriate state are worth recalling at this point. The expression "is responsible" implies liability for those entities whose activities in relation to the space object are linked to the launching state in such a way that they are subject to its territorial and/or personal jurisdiction. It is accepted that, in these cases, the systematic interpretation[73] must be based on Article VI of the Outer Space Treaty. If there is one launching state, the state that carries out the national activity as the appropriate state is certainly responsible and liable for damage caused by non-governmental entities under its jurisdiction.[74] If the launching state is not the appropriate state in the case in question, it ought to be liable for the damage in respect of persons under its territorial and/or personal jurisdiction.

Article XIII of the Outer Space Treaty refers to space activities conducted jointly with other states. If the responsibility of several states is to be considered, it is essential to clarify the role of each state. If non-governmental entities are involved in space activities, each appropriate state has an international responsibility for

[73] Vienna Convention on the Law of Treaties, Article 31(2)(c).

[74] Hobe et al. 2013: 409.

their activities under Article VI of the Outer Space Treaty. Liability, however, under Article VII of the Outer Space Treaty and under the Liability Convention, is only imposed on the launching State(s). If a state is not a launching state,[75] it has international responsibility only under Article VI of the Outer Space Treaty and is not liable. Conversely, if a launching state is not an appropriate state it is liable but does not have international responsibility under Article VI of the Outer Space Treaty. Moreover, if a state is both the appropriate state and the launching state, it is both internationally responsible and liable.

It is important to stress, however, that the combination of international responsibility and liability does not automatically give rise to joint and several liability in case of several States. Joint and several liability only applies to the liability of the launching states in case of a joint launch, within the meaning of Articles IV to V of the Liability Convention. This explanation assumes that all states are party to these treaties. If this is not the case, the question of which provisions can be regarded as customary international law binding on states not party to the Convention is further complicated.

Below is to be found the possible cases of multiple state responsibility and liability:

A – appropriate state

B – appropriate state

C – launching state

D – launching state

E – appropriate state and launching state

A + B + C: appropriate states (A, B) bear international responsibility but not joint and several, launching state (C) bears liability

A + C + D: appropriate state (A) bears international responsibility, launching states (C, D) bear liability, launching states (C, D) bear joint and several liability

[75] Vereshchetin 1983: 262–263.

A + C + E: appropriate states (A, E) bear international responsibility, launching states (C, E) bear liability, launching states (C, D) bear joint and several liability, state E bear both international responsibility and liability

C + D + E: appropriate state (E) bears international responsibility, launching states (C, D, E) bear liability, launching states (C, D, E) bear joint and several liability, state E bears both international responsibility and liability

A + B + E: appropriate states (A, B, E) bear international responsibility but not joint and several, launching state (E) bears liability, state E bears both international responsibility and liability

NATIONALITY OF THE VICTIM

In space law, nationality is also an issue with regard to the victim in case of damage caused by space objects. Article VII of the Outer Space Treaty also mentions the liability of the launching states in cases where "on the Earth, in air space or in outer space, including the Moon and other celestial bodies" the injured party is a "natural or juridical person" of "another State Party to the Treaty". The provision was based on the UN General Assembly Resolution 1962,[76] which did not yet include the words "including the Moon and other celestial bodies" at the place of the damage caused and, due to the nature of the document, used "foreign State" instead of "State Party". While the former does not represent a substantive change, the latter limits the scope of natural or juridical persons who may be considered as being injured to the states which are parties to the treaty, which is an obvious change given the treaty provision. The Liability Convention also includes the phrase "natural or juridical persons"[77] of third states as victims, which raises the question of whether it applies to national natural and juridical persons and/or to natural and juridical persons under the

[76] Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space, G.A. Res. 1962, 13 December 1963, para. 8, 18 U.N. GAOR Suppl. No. 15 (A/5515), 15, U.N. Doc. A/RES/18/1962 (1963).

[77] Liability Convention, Article IV (1).

territorial jurisdiction of the state. Article VIII of the Liability Convention, which contains the determination of the state entitled to present a claim, brings us closer to the answer. The first section repeats the phrase mentioned above and then sets out the order of the states which may present the claim. The second paragraph includes the primary right of the state of nationality to present the claim. If the state of nationality does not present a claim, the state in whose territory the natural or juridical person sustained the damage may present it. If none of the above states present a claim or notifies its intention to do so, the State of permanent residence of the injured person has the right to present it.

It follows from the above that the term "natural or juridical person" of the State as an injured party means, on the one hand, nationals and, on the other hand, natural and juridical persons who have sustained damage in the territory of the state, irrespective of their nationality. Moreover, the expression "permanent residents" in Article VIII(3) implies that the phrase "natural [...] persons of the State" also involves damage sustained on a foreign territory by a foreign national or a stateless person, if their permanent residence is in the claimant state. The concept is therefore broader, not necessarily covering only persons under personal and territorial jurisdiction, but also persons having some legal connection with the state.[78]

Applying this broader scope of persons is motivated both by a victim-oriented approach,[79] i.e. to protect as far as possible the interests of the injured party so that it does not go without compensation, and by the need to enable states to act in the interests of their population, whether or not they are nationals. Article VII of the Liability Convention excludes the application of the Convention to damage caused by the space object of the launching State if the victim is a national of that state or a foreign national who participated in the operation of the space object from its launch to its landing or while the foreign national was in the immediate vicinity of the planned launch or recovery area as a result of an invitation by the launching state. The terms "nationals" and "foreign nationals" appearing in the convention must be understood to

[78] Hobe et al. 2013: 460.

[79] Sulyok 2022: 95.

refer to both natural and juridical persons and cannot be limited to natural persons. The Liability Convention also excludes dual or multiple nationals if the liable state is one of the states of nationality. However, the United States of America intended to include dual nationals among the persons whose claims may be presented by states.[80] It would be appropriate to apply the principle of predominant nationality, as found in diplomatic protection,[81] whereby a dual national would be excluded from pursuing a claim only if the liable state was the person's predominant nationality.

Other principles already established in diplomatic protection may serve as an interesting contribution to nationality issues in space law. In the Barcelona Traction case, the International Court of Justice pointed out that the rights and obligations of limited liability companies whose capital is represented by shares are based on a "firm distinction between the separate entity of the company and that of the shareholder", that only the company is the juridical person, and that only the company is entitled to act in matters affecting it.[82] Consequently, diplomatic protection can only be granted to a company by the state of its nationality. This position was reaffirmed by the International Court of Justice in the Ahmadou Sadio Diallo case, which held that there is no exception in customary international law that allows for "protection by substitution",[83] i.e. for diplomatic protection to be granted by a state other than the state of the company's nationality. Accordingly, it would be useful to specify that the primary presenter of a claim for damage caused by a space object to a juridical person may be the state of nationality of the juridical person, rather than the state of nationality of the shareholders. However, in order to maintain

80 Hobe et al. 2013: 454–455.

81 International Law Commission, Draft Articles on Diplomatic Protection 2006, Article 7. Official Records of the General Assembly, Sixty-first Session, Suppl. No. 10 (A/61/10).

82 Case Concerning the Barcelona Traction. Light and Power Company, Limited (Belgium v. Spain), Second Phase, Judgment of 5 February 1970, I.C.J. Reports 1970, 35–36.

83 Ahmadou Sadio Diallo (Republic of Guinea v. Democratic Republic of the Congo), Preliminary Objections, Judgment of 24 May 2007, I.C.J. Reports 2007, 614–615.

a victim-oriented approach, it would be necessary, in the absence of the claim of the state of nationality of the juridical person, to provide for the possibility of the shareholders' state of nationality presenting a claim.

The Liability Convention also includes the concept of damage: Article I(a) states that

> "[t]he term 'damage' means loss of life, personal injury or other impairment of health; or loss of or damage to property of States or of persons, natural or juridical, or property of international intergovernmental organizations".

An important consideration in the assessment of damage is the contribution of the injured party, which may exonerate from the liability of the state in whole or in part. In case of non-governmental entities,

> "exoneration from absolute liability shall be granted to the extent that a launching State establishes that the damage has resulted either wholly or partially from gross negligence or from an act or omission done with intent to cause damage on the part of a claimant State or of *natural or juridical persons it represents*".[84]

The new term "it represents" appears in both Articles VI and XI. However, this does not change the scope of persons, since the scope of persons referred to in Article VIII is included for the purpose of presenting a claim for damages, and of representation by the state acting in their interest. Even in this case, no exoneration is possible if the damage results from activities incompatible with international law, in particular with the UN Charter and the provisions of the Outer Space Treaty.[85] Article XI(2) excludes the possibility of a double claim being submitted,[86] i.e. the injured natural or juridical persons may represent a claim in the courts, administrative tribunals or agencies of the launching

[84] Liability Convention, Article VI (1) [emphasis added – M. G.].
[85] Liability Convention, Article VI (2).
[86] Herczeg 1973: 417.

state, but in such a case the state of nationality cannot claim compensation. In addition, under Article XXIII, states may, by special agreement, either mutually exclude liability or waive the claim for damage.

CONCLUSION

Nationality matters arise in many aspects of space law, and they sometimes generate debates. Difficulties arise in the interpretation and application of the provisions and terms used in international documents in this field. Unfortunately, 23% of space objects are currently still unregistered, which means that proportionally there are more than 7,000 space objects only in orbit around the Earth whose nationality is problematic, and their number is increasing. This is a major problem because without registration, the nationality of the space object, and hence the state that has jurisdiction over it and the personnel thereof, cannot be established. The registration of all space objects is important not only for reasons of nationality but also for the identification of space objects, and hence their tracking, traffic management and the prevention of problems associated with space debris. As an addition to the current rules, registration as a condition for launch would contribute to the obligation to register as customary international law. An obligation to register all space objects would also facilitate the enforcement of responsibility and liability rules, as the record includes the launching state(s), making it clear that the object is associated with this/these state(s). It is important to note that liability is not based on the registry but on the launching statehood, so that an incorrect registry cannot affect the liability of the launching state.

When examining the nationality of the entity causing damage, it should be noted that while the nationality of natural persons is usually clear, the principles underlying the nationality of juridical persons may be disputed. The cross-border nature of the situation of juridical persons today requires that space law also recognise not only the principle of registration/incorporation but also the principles of establishment and the seat on the territory. The aim is

to ensure that the state of nationality of the juridical person is the "appropriate State" which would be required to authorise and supervise the juridical person most effectively because of its personal jurisdiction.

International responsibility for the activities of non-governmental entities is governed by Article VI of the Outer Space Treaty, where it should be emphasised that this term applies to both natural and juridical persons. The correct interpretation of the national activity and the appropriate state may be sufficient to ensure state responsibility for non-governmental entities in space law today. According to the proposed interpretation, the appropriate state is responsible for the activities of non-governmental entities under its territorial, quasi-territorial and personal jurisdiction, and thus for the activities of national natural and juridical persons under its personal jurisdiction. On the one hand, there is a need to ensure that non-governmental entities carry out their activities in conformity with the provisions of the Treaty and, on the other hand, there is a need to authorise and continuously supervise the space activities of non-governmental entities. The methods of this authorisation and continuing supervision are not provided for in the legislation in force, although UN General Assembly Resolution 68/74 makes detailed recommendations. Establishing this rule as customary international law would facilitate the establishment of a single licencing and continuing supervision regime and the effective implementation of the obligation concerned under the Outer Space Treaty.

In all cases, the launching state is liable for damage caused by a space object. In the event of damage, liability resulting from the conduct of non-governmental entities is established by the phrase "persons for whom it is responsible". The term "person" in this case again includes both natural and juridical persons, and refers not only to nationals, but also to any non-governmental entities under the launching state's jurisdiction. The launching state is thus liable for non-governmental entities under its territorial, quasi-territorial and personal jurisdiction. In sum, the allocation of liability to the launching state adequately ensures compensation for damage in cases of non-governmental entity involvement. However, if a non-governmental entity linked to several states is involved, for example, in the design, construction, launch and operation of a space object, and

that space object causes damage as a result of the fault of the non-governmental entity, a complex web of launching states bearing liability and of appropriate states bearing responsibility may arise. The situation is further complicated by the fact that joint and several liability can only exist between two launching states, but not between two appropriate states or between one launching state and one appropriate state. In the event of a review of the rules of responsibility and liability, it would be desirable to simplify this overly complex system, and to adopt a more effective approach with regard to damage caused through the fault of non-governmental entities.

The Liability Convention describes the injured party by the formula "natural or juridical person of the State" when it determines the state which is entitled to present a claim. This wording covers a broader range of persons than the phrases previously used. A state's nationals (natural and juridical persons); natural and juridical persons who have sustained damage in the territory of a state irrespective of their nationality; and even permanent residents of a state are all included in the category of persons on behalf of whom a state may present a claim. In the latter case, therefore, a claim may be presented even on behalf of a foreigner or a stateless person who has sustained damage abroad, provided that the person is permanently resident in the claimant state. It should be pointed out that the launching state is not liable for damage sustained by, *inter alia,* its own nationals, that is, its natural and juridical persons. The Liability Convention also excludes dual nationals from the scope of victims if one of their nationalities is that of the launching state. In light of the principle of predominant nationality, it would be advisable to exclude these persons only if their predominant nationality is that of the launching state. The determination of the claimant state is likely to raise complex questions since the existence of personal jurisdiction over a juridical person, in other words, the identity of the state of nationality, may be subject to debate. The expression "juridical person of the State" suggests that the state of nationality is definitely entitled to present a claim, but it remains to be seen whether the formula "natural [...] person of the State" has the same effect with respect to the state of nationality of shareholders. The practice of the International Court of Justice in the context of diplomatic

protection reveals that the claim of a juridical person may be presented by the state of nationality. However, the right of the state of nationality of investors to present a claim is not self-evident, although the convention's victim-oriented approach may possibly serve as an argument in favour of such an interpretation. Should this interpretation gain ground, the provision concerned would have to be amended to clarify the situation. As regards the provision on exoneration due to victim involvement, the formula "represented by" does not change the aforementioned scope of victims, that is, the natural and juridical persons on behalf of whom a state may present a claim.

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