20 March 2023

English only

Committee on the Peaceful Uses of Outer Space Legal Subcommittee Sixty-second session Vienna, 20–31 March 2023 Item 5 of the provisional agenda^{*} Status and application of the five United Nations treaties on outer space

Responses to the set of questions provided by the Chair of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space

Note by the Secretariat

At its sixty-first session, in 2022, the Working Group of the Legal Subcommittee on the Status and Application of the Five United Nations Treaties of Outer Space recommended (A/AC.105/1260, Annex I, para.7) that States members and permanent observers of the Committee provide the Subcommittee, at its sixty-second session, comments and responses to the "Set of questions provided by the Chair of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space, taking into account the UNISPACE+50 process" (A/AC.105/1260, Annex I, Appendix I).

The present conference room paper contains replies to the set of questions received from Algeria, Slovakia, and the International Society for Photogrammetry and Remote Sensing (permanent observer).

* A/AC.105/C.2/L.323.





Reply received from a State members of the Committee

Algeria

[Original: French] [Received on 29 December 2022]

1. The legal regime of outer space and global space governance

1.1. What is the main impact on the application and implementation of the five United Nations treaties on outer space of additional principles, resolutions and guidelines governing outer space activities?

While the international treaties collectively constitute the primary regulatory framework for space activities, they have a number of shortcomings. In order to mitigate those shortcomings, principles, resolutions and guidelines have been established.

The 1963 Declaration, the 1967 Treaty, the 1972 Convention, the Registration Convention and the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies, while strengthening and reaffirming the fundamental principles of space law and the matter of peace between States, do not impose any form of liability on States, for two reasons: firstly, liability is based on fault in the event of damage; and secondly, unlike in civil law, damage is not a constitutive element of international liability, which takes damage into account only in terms of compensation.

In international law, the principles, resolutions and guidelines in question are not legally binding.

For example, the applicability of the principle of freedom of access and use raises the question of the delimitation of outer space in relation to airspace, which may fall under the national jurisdiction of a State.

Non-ratification of the treaties calls into question such principles as non-appropriation.

In conclusion, even if space activities are legitimate and have their legal basis in the main treaties on outer space, the additional principles, resolutions and guidelines have no impact on the application of those treaties.

1.2. Are such non-legally binding instruments sufficiently complementing the legally binding treaties for the application and implementation of rights and obligations under the legal regime of outer space? Is there a need for additional actions to be taken?

These non-binding instruments are focused on prevention and no attempt has been made to formalize them in official international bodies. Consequently, they do not in any way constitute a strict regulatory framework establishing the various responsibilities of space actors, particularly State responsibility.

The instruments are no more than agreed texts and are not legally binding. Even if all States comply with these rules, the legal issues concerned must be reviewed with a view to the establishment of binding rules.

In conclusion, these instruments do not complement the treaties but, rather, constitute tools for the effective management of space activities.

1.3. What are the perspectives for the further development of the five United Nations treaties on outer space?

New regulations are needed. Clear, binding rules and mechanisms must govern new space activities in order to ensure that the conduct of the activity itself is sustainable and safe.

It would be useful to overhaul the regulatory framework, either by amending it or by establishing a new framework that reflects current issues and requirements in terms of technology, safety and sovereignty for better global governance.

3. International responsibility and liability

3.1. Could the notion of "fault", as featured in Articles III and IV of the Convention on International Liability for Damage Caused by Space Objects (Liability Convention), be used for sanctioning non-compliance by a State with the resolutions related to space activities adopted by the General Assembly or its subsidiary bodies, such as Assembly resolution 47/68, on the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, and the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space? In other words, could non-compliance with resolutions adopted by the General Assembly or with instruments adopted by its subsidiary bodies related to space activities be considered to constitute "fault" within the meaning of Articles III and IV of the Liability Convention?

The notion of fault as referred to in Articles III and IV of the Liability Convention, which is based on fault in the event of damage caused in space and on absolute liability in the event of damage caused on Earth or to an aircraft in flight, imposes on States a form of international responsibility that is excessive compared with ordinary law. States that launch or procure the launching of a space object, as well as States from whose territory or facility a space object is launched, are jointly and severally liable for any damage caused by the space object or its components.

However, the State would not be absolutely liable if the damage was not caused by a wrongful act and if there was a possibility of exoneration from paying compensation.

Moreover, unlike in civil law, damage is not a constitutive element of international liability, which takes damage into account only in terms of compensation.

In other words, in order for an act or omission to incur the international liability of a State, it must first be established whether the act or omission involved failure to comply with a specific and defined international "obligation". It is then necessary to establish whether the existence of liability requires – in addition to the wrongful and prejudicial act – fault or malice on the part of the subject of law to which the act is imputable.

From that perspective, legal precision is entirely lacking from the notion, established as a principle and consolidated in General Assembly resolution 47/68, of the use of outer space for peaceful purposes in accordance with the 1967 Outer Space Treaty, Article III of which refers to the maintenance of peace and international security as an objective to be pursued through the conduct of space activities in accordance with international law, and Article XI of which promotes international cooperation in the peaceful exploration and use of outer space through information-sharing.

Thus, while all military activities and any testing, installation and use of weapons of mass destruction in outer space are prohibited, it might be understood as implicit that the use of other weapons or personnel is allowed, subject to compliance with international law.

Non-compliance with resolutions cannot be considered to constitute fault within the meaning of Articles III and IV of the Liability Convention. In addition, even if the resolution in question is intended to "mitigate" a shortcoming of the Convention, it is not legally binding, for the simple reason that it is the United Nations Security Council that has executory power, unlike the General Assembly, a consultative body, by which the resolution was adopted.

3.2. Could the notion of "damage", as featured in Article I of the Liability Convention, be used to cover loss resulting from a manoeuvre performed by an

operational space object in order to avoid collision with a space object or space debris not complying with the Space Debris Mitigation Guidelines of the Committee?

Under the Liability Convention, "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". It is thus the notion of damage that is considered in the Convention, rather than the act by which the damage was caused.

3.3. Are there specific aspects related to the implementation of international responsibility, as provided for in Article VI of the Outer Space Treaty, in connection with General Assembly resolution 41/65, on the Principles Relating to Remote Sensing of the Earth from Outer Space?

Clearly, remote sensing activities should be carried out in a manner that is not detrimental to the rights and interests of States; were they to be conducted otherwise, they would incur the liability of the State. There is a lack of clarity with regard to the application of the principle of responsibility, which is stated simply and briefly in the resolution as being "without prejudice to the applicability of the norms of international law on State responsibility for remote sensing activities".

A number of related questions therefore remain unresolved, including the principle of sovereignty over natural resources, which is a fundamental principle of international law, and the principle of freedom of exploitation and use of outer space.

There is a further, fundamental question: what legal meaning can be given to the norms of international law?

Moreover, it is noted that the question above refers only to Article VI of the 1967 Treaty with respect to responsibility, whereas Article VII of that Treaty, and the Liability Convention of 1972, also concern responsibility. These texts deal with space activities rather than remote sensing activities – which are more complex, and some of which are not conducted in space – and their provisions do not govern responsibility in connection with remote sensing activities.

3.4. Is there a need for traffic rules in outer space as a prerequisite of a fault-based liability regime?

Rules governing space traffic must be established in order for a fault-based liability regime to be created. The sine qua non for the establishment of a liability regime is clarification of the notion of fault. Accordingly, it would be useful to clarify the rights and obligations of States and operators and the status of "space travellers". The determination of that status would ensure legal stability with respect to the space activities carried out.

4. Registration of space objects

4.1 Is there a legal basis to be found in the existing international legal framework applicable to space activities and space objects, in particular the provisions of the Outer Space Treaty and the Convention on Registration of Objects Launched into Outer Space (Registration Convention), which would allow the transfer of the registration of a space object from one State to another during its operation in orbit?

The transfer of satellites in orbit is not provided for in the space treaties, in particular the Outer Space Treaty and the Registration Convention.

Article VIII of the Outer Space Treaty states the following: "A State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body. Ownership of objects launched into outer space, including objects landed or constructed on a celestial body, and of their component

parts, is not affected by their presence in outer space or on a celestial body or by their return to the Earth."

However, paragraph 4 of resolution 62/101 of 17 December 2007, entitled "Recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects", refers to the change in supervision of a space object in orbit.

This legal vacuum and the wording of Article VIII of the Outer Space Treaty may give rise to conflicting interpretations with respect to the transfer of satellites from one State to another during their operation in orbit.

Consequently, it might be understood that such transfers can be carried out between two non-governmental entities under the jurisdiction of the same State or between launching States in respect of the same space object. Thus, a transferring State remains a launching State after the transfer in orbit, whereas the State to which the object was transferred cannot become a launching State and therefore assumes no responsibility.

4.2 How could a transfer of activities or ownership involving a space object during its operation in orbit from a company of the State of registry to a company of a foreign State be handled in compliance with the existing international legal framework applicable to space activities and space objects?

Such a transfer of registration could be governed by:

- Article IV, paragraph 2, of the Registration Convention, which provides that "Each State of registry may, from time to time, provide the Secretary-General of the United Nations with additional information concerning a space object carried on its registry."
- Paragraph 4 of resolution 62/101 of 17 December 2007, entitled "Recommendations on enhancing the practice of States and international intergovernmental organizations in registering space objects", which states:

"4. *Recommends* that, following the change in supervision of a space object in orbit:

(a) The State of registry, in cooperation with the appropriate State according to Article VI of the Outer Space Treaty, could furnish to the Secretary-General additional information, such as:

- (i) The date of change in supervision;
- (ii) The identification of the new owner or operator;
- (iii) Any change of orbital position;
- (iv) Any change of function of the space object;

(b) If there is no State of registry, the appropriate State according to Article VI of the Outer Space Treaty could furnish the above information to the Secretary-General;"

Transfers of activities and ownership would continue to be governed by commercial provisions.

4.3 What jurisdiction and control are exercised, as provided for in Article VIII of the Outer Space Treaty, over a space object registered by an international intergovernmental organization in accordance with the provisions of the Registration Convention?

A space object registered by an international intergovernmental organization is subject to the provisions of Article VII of the Registration Convention, which states that "references to States shall be deemed to apply to any international intergovernmental organization which conducts space activities if the organization declares its acceptance of the rights and obligations provided for in this Convention and if a majority of the States members of the organization are States Parties to this Convention and to the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies."

The space object could therefore be subject to the jurisdiction of the States concerned and to the control of any State in proportion to that State's contribution to the organization or operation of the space object.

4.4 Does the concept of megaconstellations raise legal and/or practical questions, and is there a need to react with an adapted form of registration?

In addition to the problems of collisions and the resulting generation of space debris, megaconstellations could raise new legal questions with regard to international law and thus issues of international regulation that could be addressed by the Committee on the Peaceful Uses of Outer Space with a view to establishing a legal framework specific to such constellations, initially through the implementation of agreed guidelines, accepted and applied by all the operators concerned.

4.5 Is there a possibility, in compliance with the existing international legal framework, based on the existing registration practices, of introducing a registration "on behalf" of a State of a launch service customer, based on its prior consent? Would this be an alternative tool to react to megaconstellations and other challenges in registration?

Given that the issue of megaconstellations is new, it would be worth re-examining thoroughly the entire international legal corpus in order to identify those provisions that can be applied to such constellations until such time as an international instrument dealing specifically with megaconstellations is adopted. This would ensure that any questions arising in relation to such constellations were addressed.

5. International customary law in outer space

5. Are there any provisions of the five United Nations treaties on outer space that could be considered as forming part of international customary law and, if yes, which ones? Could you explain the legal and/or factual elements on which your answer is based?

The rapid progress of the conquest of outer space made it difficult, if not impossible, to wait for the establishment of international rules specific to outer space. As a result, customary rules were used as the basis for the development of space law, as was also the case with regard to the basic principles relating to space activities, such as the principle of non-appropriation of outer space, that were enshrined in the Outer Space Treaty of 1967.

The launch of the first space object raised the general question of the law applicable to outer space, thus leading to the realization that the legal principles applicable to space activities needed to be determined. It was in that context that the principle of non-appropriation of outer space was codified, in parallel with the other principles, namely, freedom of use, exploitation and exploration of outer space, and the equal rights of States to use outer space for peaceful purposes in the interests of all humankind.

Slovakia

[Original: English] [Received on 12 January 2023]

Set of questions provided by the Chair of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space, taking into account the UNISPACE+50 process The Slovak Republic is party to the 4 United Nations treaties on outer space out of 5. The prepared draft of the Slovak Space Law takes into account the 4 United Nations treaties and is in line with them. Slovakia considers becoming a party to the Moon Treaty in the future as well.

Reply received from an observer organization of the Committee

International Society for Photogrammetry and Remote Sensing (ISPRS)

[Original: English] [Received on 10 October 2022]

The legal regime of outer space and global space governance

1.1. What is the main impact on the application and implementation of the five United Nations treaties on outer space of additional principles, resolutions and guidelines governing outer space activities?

The five space treaties lay down the fundamental legal framework governing human activities in outer space. Such a framework directly applies to States and indirectly to private entities through domestic licensing mechanisms.

Other instruments, such as United Nations principles, resolutions, and guidelines, complement the treaties' provisions and address issues that, while not being of paramount importance at the time the treaties were drafted, are particularly relevant today.

Notably, such instruments have a non-legally binding status, as opposed to the binding nature of the treaties.

1.2. Are such non-legally binding instruments sufficiently complementing the legally binding treaties for the application and implementation of rights and obligations under the legal regime of outer space? Is there a need for additional actions to be taken?

The adoption of non-legally binding instruments is an important instrument in the hands of the States members of the Committee on the Peaceful Uses of Outer Space , on one side, to avoid the difficulties associated with drafting and agreeing upon legally binding instruments at international level, and, on the other side, to lay down (non-binding) rules to govern matters in urgent need for regulation. From this perspective, non-binding instruments constitute a useful means to enable international space law to keep pace with technological developments and with the challenges presented by the diverse nature of space players.

Potentially, other instruments might be discussed outside of the Committee framework, provided that they are consistent with the provisions of the space treaties and with the obligations that they impose upon States.

1.3. What are the perspectives for the further development of the five United Nations treaties on outer space?

As to the perspective for further development of the five United Nations space treaties the following suggestions can be made: (1) to continue promoting adherence to the space treaties; (2) to continue to periodically review the status and implementation of the space treaties; (3) to establish within the Committee dedicated mechanisms and procedures to enable the exchange of views and, possibly, a common understanding, on key issues and concepts that were either marginally addressed in the treaties or not specifically dealt with at all; (4) to launch within the Committee initiatives aimed at reviewing and assessing the domestic mechanisms that States have put in place to comply with the requirements set forth

by Articles VI, VII, and VIII, as well as the Liability and Registration Conventions, in relation to "novel" private space activities.

2. United Nations treaties on outer space and provisions related to the Moon and other celestial bodies

2.1. Do the provisions of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty), constitute a sufficient legal framework for the use and exploration of the Moon and other celestial bodies or are there legal gaps in the treaties (the Outer Space Treaty and the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Agreement))?

The Outer Space Treaty provides the general principles applicable to all human activities in outer space, including those taking place on the Moon and other celestial bodies. However, the Treaty lacks specific provisions governing lunar and other celestial bodies' operations; most importantly, the Treaty is silent on the question of the legality of the utilization of space resources, especially when such utilization is undertaken for commercial purposes. Based on these elements, the Outer Space Treaty does not provide, when individually considered, a sufficient legal framework to govern lunar and other celestial bodies' activities. The Moon Agreement was meant to fill up the legal gaps left open by the Outer Space Treaty by setting forth provisions dealing with the exploration and use of lunar (and other celestial bodies) resources both for scientific and commercial reasons.

2.2. What are the benefits of being a party to the Moon Agreement?

Parties to the Moon Agreement enjoy several rights related to the utilization of lunar and other celestial bodies both for scientific and commercial purposes. As to the former, States may land on the surface of the Moon, build lunar stations and even collect and use resources to support their mission. In relation to the commercial utilization of lunar resources, Parties are entitled to take active part in the negotiation aimed at setting up an international regime to govern it. In that context, States have the possibility to promote their understanding of key concepts, such as "common heritage of mankind" and "sharing of benefits" and to take steps to make sure that the international regime reflects, or at least does not go against, their interest.

2.3. Which principles or provisions of the Moon Agreement should be clarified or amended in order to allow for wider adherence to it by States?

The concept of the "common heritage of mankind", the elements of the legal regime to govern the exploitation of celestial bodies' resources and the definition of celestial bodies.

3. International responsibility and liability

3.1. Could the notion of "fault", as featured in Articles III and IV of the Convention on International Liability for Damage Caused by Space Objects (Liability Convention), be used for sanctioning non-compliance by a State with the resolutions related to space activities adopted by the General Assembly or its subsidiary bodies, such as Assembly resolution 47/68, on the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, and the Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space? In other words, could non-compliance with resolutions adopted by the General Assembly or with instruments adopted by its subsidiary bodies related to space activities be considered to constitute "fault" within the meaning of Articles III and IV of the Liability Convention?

Resolutions adopted by the United Nations General Assembly carry a special political value, as they reflect the will and understanding of its Member States. Nevertheless, such instruments have a mere recommendatory value. The notion of

"fault" is usually associated with the breach of an obligation falling upon a certain subject, either of governmental or non-governmental nature. Considering the non-binding status of the United Nations General Assembly Resolutions, it would appear rather challenging to use the notion of "fault", as per Articles III and IV of the 1972 Liability Convention, to sanction non-compliance with the terms of the General Assembly Resolutions related to space activities.

3.2. Could the notion of "damage", as featured in Article I of the Liability Convention, be used to cover loss resulting from a manoeuvre performed by an operational space object in order to avoid collision with a space object or space debris not complying with the Space Debris Mitigation Guidelines of the Committee?

In principle, the case referred to in the question could fall within the scope of the definition of "damage" provided in Article I of the 1972 Liability, as such Article refers to the loss of or damage to the property of States and of persons and a space object is certainly someone's property. A different story is if this event would trigger the applicability of the Convention and, consequently, its procedure to get compensation for the damage suffered. Indeed, the Convention requires "fault" in relation to damage caused in space; in the absence of mandatory rules regulating manoeuvring in space as well as space debris mitigation practices, it would arguably be challenging in the case at stake to prove that the avoidance collision manoeuvre and/or the lack of compliance with Space Debris Mitigation Guidelines amounts to "fault", hence to a punishable action under the Convention.

3.3. Are there specific aspects related to the implementation of international responsibility, as provided for in Article VI of the Outer Space Treaty, in connection with General Assembly resolution 41/65, on the Principles Relating to Remote Sensing of the Earth from Outer Space?

The Principles relating to the Remote Sensing of the Earth from Outer Space, apart from specifically making reference to Article VI of the Outer Space Treaty (Principle XIV), deal with the distribution data to third States and in particular to sensed States on a non-discriminatory basis. Such a distribution shall not endanger international relations and national security interests, particularly when the provision of data is carried out by a private entity. In order to comply with its obligations under Article VI of the Outer Space Treaty, a State that is dealing with a private entity responsible for the distribution of remote sensing data, especially those of high-resolution content, shall put in place a system of authorization and supervision to ensure that such distribution meet adequate security standards.

3.4. Is there a need for traffic rules in outer space as a prerequisite of a fault-based liability regime?

Traffic rules would certainly be beneficial to reduce the risk of collision among space objects, active and spent, and to overall contribute to promote the long-term sustainability of space activities. The extent to which they would contribute to a fault-based liability regime would depend on their legal status, either binding or recommendatory, and their implementation by space actors.

An importance element that could contribute to enhance the legal relevance of such traffic rules would be their insertion into domestic space legislation, a move that would make their compliance a mandatory requirement for national space actors.

4. Registration of space objects

4.1 Is there a legal basis to be found in the existing international legal framework applicable to space activities and space objects, in particular the provisions of the Outer Space Treaty and the Convention on Registration of Objects Launched into Outer Space (Registration Convention), which would allow the transfer of the registration of a space object from one State to another during its operation in orbit?

The Outer Space Treaty and the Registration Convention establish that only a State that qualifies as a launching State for a certain object can proceed to register it. These two treaties do not deal with the practice of transfer of registration and, specifically, neither authorizes it nor prohibits it. Arguably, if one accepts the legality of the transfer of registration under the Treaties, such a legality would require that the State to which the object is transferred be one of its original "launching States". Absent this condition, such a State could not lawfully act as a "State of registry" under the treaties.

4.2 How could a transfer of activities or ownership involving a space object during its operation in orbit from a company of the State of registry to a company of a foreign State be handled in compliance with the existing international legal framework applicable to space activities and space objects?

The transfer of space activities should be handled in accordance with Article VI of the 1967 Outer Space Treaty, which makes States internationally responsible for national activities in outer space, including those undertaken by non-governmental entities, and requires them to assure that such activities are carried out in conformity with the provisions of the Treaty and international law. Consequently, the transfer of space activities needs authorization by the appropriate State party that originally authorized the activity itself. Several States have included respective provisions in their national space legislations, including France, Belgium, the Netherlands, just to name a few.

4.3 What jurisdiction and control are exercised, as provided for in Article VIII of the Outer Space Treaty, over a space object registered by an international intergovernmental organization in accordance with the provisions of the Registration Convention?

Jurisdiction and control exercised by an international intergovernmental organization should not substantially differ from that exercised by a State. It is certainly true that the term "jurisdiction" is not usually applied with regard to an international organization. However, it is submitted that such a term should be interpreted in accordance with the object and purpose of Article. VIII of the 1967 Outer Space Treaty, namely, to identify who has the right to exercise control over a space object. Therefore, there should not be any problem with granting such a right to an international organization which, according to XXII of the 1975 Registration Convention has declared its acceptance of the rights and obligations of the said Convention, also by taking into account that the organization itself could benefit from the support and expertise of its member States.

4.4 Does the concept of megaconstellations raise legal and/or practical questions, and is there a need to react with an adapted form of registration?

An important question is whether the constellation should be registered as a whole or if each satellite should be registered individually. It remains to be seen in practice what kind of solution the country that has authorized the deployment of such a constellation would adopt.

4.5 Is there a possibility, in compliance with the existing international legal framework, based on the existing registration practices, of introducing a registration "on behalf" of a State of a launch service customer, based on its prior consent? Would this be an alternative tool to react to megaconstellations and other challenges in registration?

The space treaties establish that only a State that qualifies as a "launching State" in relation to a space object is entitled to register it. The consistency with international space law of the possibility envisioned in the question must be assessed against this fundamental rule. If the State under consideration meets the "launching State" criterion, then the validity of the option of "registration on behalf" might be assessed.

5. International customary law in outer space

5. Are there any provisions of the five United Nations treaties on outer space that could be considered as forming part of international customary law and, if yes, which ones? Could you explain the legal and/or factual elements on which your answer is based?

Some of the principles laid down in the Outer Space Treaty might be deemed to amount to customary international law, for example the non-appropriative nature of outer space, the right of States to explore and use outer space, the need for private space activities to be authorized and continuously supervised, etc. Such a reasoning is since these principles not only have been confirmed by State practice but also have been reflected in the provisions of national space legislation.

6. Proposal for other questions

6. Please suggest additional questions that could be inserted into the set of questions above to meet the objective of the UNISPACE+50 thematic priority on the legal regime of outer space and global space governance.

What steps could be taken to mitigate the detrimental environmental effects that the deployment of megaconstellations of satellite would have in Low-Earth Orbit and, broadly considered, on the long-term sustainability of space activities?
