

1. Answers 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

Reply by the International Society for Photogrammetry and Remote Sensing

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?

The first four of 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. As to the fifth space treaty, the Moon Agreement, the rather limited adherence by major spacefaring nations and the fundamental discussion of, even opposition to, some of its key features causes its relevance as part of the legal regime for outer space to be much more limited.

Other instruments, such as UN 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 COPUOS, 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 COPUOS 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 UN 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 COPUOS 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 COPUOS 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. As for the Moon Agreement, it should be added that the above suggestions should take into due consideration on the one hand the limited adherence to it and on the other hand the various immanent plans to go back to the Moon.

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. The limited adherence and ongoing discussions pertaining to the Moon Agreement however caused that ambition to be largely thwarted so far.

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 UN 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 UNGA 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 UNGA Resolutions related to space activities. However, increasing adherence to the terms of such non-binding documents may in the future lead to a situation where they would come to reflect customary international law, read prominent indicators of standards lack of compliance with which might be argued to amount to fault for want of more precise definitions.

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 Art. I of the 1972 Liability Convention, 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 maneuvering in space as well as space debris mitigation practices, it would arguably be challenging in the case at stake to prove that the collision avoidance maneuver, certainly if conducted in an effort to comply with Space Debris Mitigation Guidelines, amounts to ‘fault’, hence to a punishable action under the Convention. On the other hand, the concept of the ‘good Samaritan’, waiving liability because of underlying ‘good intentions’, has not yet become an acknowledged part of space law.

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. To the extent the Principles can be said to reflect customary international law, the responsibility pursuant to Article VI applies here as well. Such a distribution shall therefore 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, OST, 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 to a fault-based liability regime

Answer. 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 Art. 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 Art. 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 Article VII 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. It then, however, depends on the international organization itself to what extent such jurisdiction could be exercised. In the most prominent current example, where the European Space Agency (ESA) has deposited the relevant declaration under the Registration Convention and has become a partner to the International Space Station, the underlying Intergovernmental Agreement (IGA) does not refer to ESA when it comes to jurisdiction but to its individual member states parties to the IGA.

4.4 Does the concept of mega-constellations 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 mega-constellations 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 in the five United Nations treaties on outer space that could be considered to form 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 mega-constellations of satellite would have in Low-Earth Orbit and, broadly considered, on the long-term sustainability of space activities?