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English only

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**Committee on the Peaceful  
Uses of Outer Space  
Legal Subcommittee  
Fifty-eighth session  
Vienna, 1–12 April 2019  
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 fifty-seventh session, in 2018, the Working Group of the Legal Subcommittee on the Status and Application of the Five United Nations Treaties of Outer Space recommended (A/AC.105/1177, Annex I, para.7) that States members and permanent observers of the Committee provide the Subcommittee, at its fifty-eighth 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.105/1177, Annex I, Appendix I).

The present conference room paper contains replies received to the set of questions from Pakistan and the United Arab Emirates, and from the Secure World Foundation.

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\* [A/AC.105/C.2/L.308](#).



## **I. Replies received from States members of the Committee**

### **Pakistan**

[Original: English]

[Received on 7 January 2019]

1. Pakistan supports the international efforts aimed at strengthening the rule of law in outer space. Pakistan has ratified all the five UN treaties on outer space. As a state party to these treaties, we believe that these UN treaties form a strong and primary legal framework for safe conduct of outer space activities. (2)
2. Pakistan fully supports and welcomes reconvening of the Working Group on the status and application of the United Nations treaties on Outer Space and assures participation and contribution in the development of the multi-year work plan under UNISPACE+50 Thematic Priority 2.

### **United Arab Emirates**

[Original: English]

[Received on 2 February 2019]

The United Arab Emirates has recently joined the Agreement on the Rescue of Astronauts, the Return of Astronauts and Return of Objects Launched into Outer Space.

## **II. Replies received from permanent observers of the Committee**

### **Secure World Foundation**

[Original: English]

[21 January 2018]

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?**

Additional principles, resolutions, and guidelines governing outer space activities can have a positive impact on the understanding of terms and concepts in the existing treaties on outer space. They can reflect State practice in the understandings and application of provisions of the treaties, and they can also show the views of States without being reflective of State practice per se. However, additional principles, resolutions, and guidelines do not have the same legal weight as binding treaty law, and should not be construed as offering binding interpretations of the treaties.

Principles, resolutions, and guidelines developed after the era of treaty-making within COPUOS bolster the notion that the five United Nations treaties on outer space are not currently, nor were previously, all-encompassing and complete in their treatment of the activities of States in the exploration and use of outer space. Rather, they demonstrate that the regime of space law is a limited regime, and an open legal order subject to further elaboration.

**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?**

To the extent that non-legally binding instruments ‘complement’ the legally binding treaties, it might also be said that non-legally binding ‘soft law’ instruments sit adjacent to these hard law sources as a kind of subjective, partial, and non-authoritative commentary to them, and perhaps reflect growing issues and ambiguities discovered subsequent to the creation of the initial hard law instruments. By incorporating the views of the scientific and commercial community in the development and iteration of these norms, non-binding instruments also serve as flexible and responsive governance regimes. In so doing, they may even bolster the continuing adherence to existing hard law norms.

However, does the promulgation of ‘soft’ law threaten the coherence of ‘hard’ law — in that subjects of the law may find it difficult to distinguish between what behaviour is positively required by the law, and what behaviour is merely encouraged (or discouraged, as the case may be) by these non-legal instruments? Additionally, do these soft law norms presage and anticipate the subsequent development of binding law, or do they actually forestall the creation of subsequent hard law?

Lastly, not all activity in space requires international regulation. What norms of behaviour are, by virtue of the importance of the activity they address, best enshrined in hard regulation, and what activity is most expediently and effectively addressed by softer norms of behaviour, or in national municipal approaches?

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

The current international appetite and readiness for the development and promulgation of new binding international legal instruments seems negligible. Rather, many States are developing their own domestic regulatory frameworks and ensuring that it aligns with their international obligations, as well as serves their domestic national interests. This need for domestic regulation is especially relevant in light of Article VI of the Outer Space Treaty, which places international responsibility for national activities in outer space, whether governmental or non-governmental, squarely on the shoulders of the appropriate State.

Regarding the further development of the existing treaties, Article XV of the Outer Space Treaty provides a mechanism for its amendment, and similar provisions existing in subsequent treaties (Art. 8 of the Astronaut Agreement; Art. XXV of the Liability Convention; Art. IX of the Registration Convention; and Art. 17 of the Moon Agreement). To date, no amendments have been offered by any of the States Parties to these agreements. It should also be noted that these treaties form a sort of ‘family’ with the Outer Space Treaty forming the ‘foundation’ upon which subsequent treaties have built upon, in clarifying and expanding its provisions. The Astronaut Agreement expands upon Art. V, while the Liability Convention expands upon Art. VII, and the Registration Convention expands upon Art. VIII of the Outer Space Treaty. These compact, tightly-focused treaties expand on brief articles of the Outer Space Treaty. This history indicates that any subsequent treaties on space might follow suit, expanding upon basic provisions of the Outer Space Treaty (a treaty of ‘principles’) through the creation of new, focused treaties rather than amending the Outer Space Treaty or other treaties, and without attempting large, all-encompassing treaties on a wide-range of topics.

However, the current atmosphere of norm-creation leans towards non-binding documents, of which the currently concluded LTS guidelines is an example. As mentioned above, non-binding norms should eventually lead towards subsequent binding law, especially in areas of serious concern to States. However, some norms might best be left in non-binding form, so as to permit their more rapid revision and updating by all stakeholders in the activity or in areas where a multiplicity of national

approaches are deemed best, as is the case of rapidly evolving technologies and 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 lack of clarity (*non liquet*), and the existence of gaps (*lacunæ*) and silence is a known phenomena in international law.<sup>1</sup> Insufficiencies in the law may be intentional or inadvertent. Additionally, insufficiencies may accrue during the negotiation and finalization of the legal instrument, or—as is the case with activities and technologies which progress and develop through human ingenuity, these insufficiencies may develop over time.

The existence of legal gaps within space law has been remarked upon with growing tempo.<sup>2</sup> On the specific topic of the use and exploration of the Moon and other celestial bodies, the decades of comment within COPUOS, mirrored by academic discussion and debate, signal strongly that the law is unclear in this regard. While some hold that Article II of the Outer Space Treaty contains ‘no gaps’, the decades of discussion about its meaning indicate otherwise.

Permissive textual arguments are often based on the opening words of the Outer Space Treaty in Article I, stipulating that the exploration and use of outer space, including the Moon and other celestial bodies, shall be the province of all mankind, and continue with stressing that outer space shall be free for exploration and use by all States without discrimination of any kind. These broad permissive freedoms to access, use, and exploit celestial bodies and celestial resources are aligned with the purpose of the treaty’s creation and with its vision, as contained in the initial sentence of its preamble (“[i]nspired by the great prospects opening up before mankind as a result of man’s entry into outer space,”).

Conversely, a reading of Article II as prohibitive of celestial resource use is unwarranted, and would drive an interpretative result which is manifestly absurd and unreasonable (to borrow phraseology from the Vienna Convention on the Law of Treaties for incorrect interpretive results). More fundamentally, the normative background of international relations to which international law ‘binds’ States offers the logical result of a residual permissive principle when no clear, explicit prohibition on space resource use can be cited. Fortuitously, the view that Article II prohibits the use of celestial resources is now only held by a small minority of hold-outs, and most stakeholders in the space area see the wisdom of an interpretation that would foster next generation and advanced space endeavours which include the use of resources in space. Many realize that advanced and lasting exploration of outer space requires the harnessing and use of resources found there.

Nevertheless, the current lack of clarity as to the limits of the freedom to use space resources, and its intersection with the corresponding rights of other States in space (as reflected in the ‘due regard’ principle of Article IX of the Outer Space Treaty), points toward further norm-making activity, which would be best done within

<sup>1</sup> Helen Quane, *Silence in International Law*, British Yearbook of International Law, Volume 84, Issue 1, 1 January 2014, Pages 240–270, <https://doi.org/10.1093/bybil/bru021>.

<sup>2</sup> See for example Tanja Masson-Zwaan, *The Relevance of Hard Law and Soft Law in the Further Development of Space Law*, in 10<sup>th</sup> United Nations Workshop On Space Law, slide 13 (2016), Available at: <https://bit.ly/2dFSYx9>; United Nations Committee On The Peaceful Uses Of Outer Space, Report of the Legal Subcommittee on Its Fifty-Seventh Session, A/AC.105/1177 paras. 34, 97, and 235 (2018); *Workplan of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space under thematic priority 2*, para. 6 (a), A/AC.105/1169.

COPUOS. Preliminary efforts have already been undertaken by the Hague International Space Resources Governance Working Group (of which Secure World Foundation is a Member), which is nearing the finalization of ‘building blocks’ as principles to be harnessed for normative regimes in the use of space resources.<sup>3</sup> The Hague Working Group has provided regular status updates to COPUOS through Member States who are also participants in the group.

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

The Moon Agreement entered into force on 11 July 1984, over 34 years ago. As of 1 January, 2018, there are eighteen States Parties to the Moon Agreement, with an additional four signatory States (A/AC.105/C.2/2018/CRP.3).<sup>4</sup> With 193 Member States of the United Nations, eighteen States Parties to the Moon Agreement represents 9% of the sovereign States in the United Nations system who have chosen to accept the rights and obligations of the Moon Agreement; therefore 91% of all possible States Parties have refrained from joining this instrument, and have done so for a considerable number of years. No major spacefaring State is a party to the Moon Agreement.

These facts attest to the extremely limited impact and relevance of the Moon Agreement, either as having assisted in fostering the current state of global space affairs, or of its prospects for the further development of space activities. Many commentators have attested to the uncertain nature of articles of the Moon Agreement, including its interpretation and application for emerging, non-traditional space activities such as celestial resource use. As such, any possible benefits of being a party to the Moon Agreement appear marginal or illusory. Additionally, because of the legal uncertainty introduced in the Moon Agreement surrounding the use of celestial resources, and the mixed success of this treaty’s acceptance by the global community, it can be argued that the Moon Agreement and the discussions and divisions of opinion surrounding it are actually distracting in discussions about advanced space activities requiring celestial resource use, and consequently that the Moon Agreement is actually detrimental to fostering the further development of space activities.

## 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 problematic provisions of the Moon Agreement relate to the opaque phrase ‘common heritage of mankind’ in its Article 11.1. This phrase is also used in other special regimes of international law, but concerning other activities, and whose interpretation and application elsewhere cannot be analogized to space law.<sup>5</sup> Nevertheless, the mechanisms of benefit sharing by the international community of resources utilized by one or more States, as seemingly alluded to by the common heritage phrasing, is anathema to the practical development of advanced space activities such as celestial resource use. Due to this troublesome conception of space resources, including resources on the Moon and all other celestial bodies being somehow the commonly held property of all humankind, the Moon Agreement’s conception does not offer a practical or attractive path forward for the progress and development of space activities.

<sup>3</sup> The Hague International Space Resources Governance Working Group, <https://www.universiteitleiden.nl/en/law/institute-of-public-law/institute-for-air-space-law/the-hague-space-resources-governance-working-group>.

<sup>4</sup> See also United Nations Treaty Section, Chapter XXIV—Outer Space, *Available at*: <https://bit.ly/2FCrV5M>

<sup>5</sup> While other special regimes of international law such as maritime law also use this phrase, Articles 31 and 32 of the Vienna Convention on the Law of Treaties makes it clear that instruments from these other special regimes do not appear on the list of permissible sources for treaty interpretation purposes while seeking to understand the phrase’s appearance in the Moon Agreement.

### 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?**

No, because these provisions in the Liability Convention establish liability for fault resulting in physical damage; a situation that results in a compensatory duty, but which nevertheless is not illegal under the treaty language. This liability regime provides no test or criteria for non-compliance or non-observance of a State’s international obligation. However, a more robust and flexible regime can be found under general international law related to internationally wrongful acts.<sup>6</sup> Using the framework from general international law, neither fault nor physical damage is required, merely that the act is attributable to the State, and that the act constitutes a breach of that State’s international obligations. Additionally, the available remedies resulting from an internationally wrongful act are broader, including the continuing duty of performance, cessation and non-repetition, and of reparation.

- 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?**

No. The notion of damage under the Liability Convention was meant to encompass a set of physical effects. Damage is defined in Article 1 (a) as “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”. Consequently, non-physical losses such as loss of operational capacity or related unrealized capabilities, so long as their effects are entirely non-physical, falls outside the definition of damage under the Liability Convention. The regime under the Liability Convention is meant to address the forgoing list of physical effects, and should not be repurposed or expanded for other situations in contravention of the treaty’s intentional structure of compensation of physical damage.

- 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?**

A hierarchical relationship exists between the two instruments, with the Outer Space Treaty existing as hard treaty law, and the Remote Sensing Principles sitting adjacent as subsequent commentary specific to remote sensing. The Remote Sensing Principles give some indication as to what behaviour constitutes a State’s observance (or non-observance) of its international obligation that its national activities in outer space are carried out in conformity with the Outer Space Treaty (and, if applicable, other relevant treaties). A cautious starting position for analysis would be that activities in outer space, whether governmental or non-governmental in nature, should conform with the Remote Sensing Principles – albeit with the caveat that these principles are

<sup>6</sup> United Nations General Assembly Resolution 56/83, Responsibility of States for internationally wrongful acts, [A/RES/56/83](#), Jan. 28, 2002; *See also* James Crawford, *State Responsibility*, Max Planck Encyclopedia of Public International Law.

merely principles in nature, and therefore give uncertain normative signals offering vague guidance as to what acts constitutes compliance or violation, and with the additional and important caveat that the principles are not hard binding law, and therefore compliance is not mechanically compulsory. An examination of customary State practice in regard to this matter may reveal richer and more detailed results.

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

Under Article VI of the Outer Space Treaty, each State party is responsible for the authorization and continuing supervision of its national space activities, including those of private sector entities. Traditionally this responsibility has been implemented through pre-launch licensing. As space activities develop, there may be a need for more comprehensive oversight of specific types of space activities, such as those involving humans, or over activities in particularly congested orbits. However, there is yet no consensus as to which activities may need such additional oversight nor the rules that should be applied.

At this early stage, the focus should be on establishing the prerequisites for Space Traffic Management (STM). These include improving the quality and accessibility of Space Situational Awareness (SSA) data to monitor space activities and the space environment, developing best practices and norms of behaviour for space activities, as well as efforts to share SSA data when possible. Developing the capabilities for accurate situational awareness underly the attributive needs of other portions of the space treaties. Currently, absolute attribution for anomalies on orbit is largely impossible.<sup>7</sup> States should also be encouraged to examine their national oversight mechanisms and begin internal discussions on how best to align administrative, regulatory, and policy roles and responsibilities to enable a future STM regime.

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<sup>7</sup> See for example Moriba Jah, *Advanced Sciences and Technology Research in Astronautics*, Available at: <http://sites.utexas.edu/moriba/astrigraph/>.