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Committee on the Peaceful Uses of Outer Space

Definition and delimitation of outer space: views of States members and permanent observers of the Committee

Note by the Secretariat

Addendum

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Argentina

[Original: Spanish]
[20 January 2022]

Given the democratization of the use and exploration of outer space, it is necessary to continue working – through consensus-building within the framework of the international organizations, and in particular the Committee on the Peaceful Uses of Outer Space – on the definition and delimitation of outer space, as the Argentine Republic has always argued. This will contribute to legal certainty and the sustainability of outer space activities, and thus also to traffic management and mitigation of the risks posed by space debris, especially in the light of missions involving human transportation.

Taking into account the scientific and technological capacity that has been developed in the Argentine Republic as a result of various projects undertaken by the National Commission on Space Activities (mainly in the field of Earth remote sensing), telecommunications projects have also been launched.

Within that technological context, and with regard to the question of whether a legal framework is in place in relation to the geostationary orbit, the first point to highlight is that the Argentine Republic has ratified the Outer Space Treaty and, consequently, the activities carried out in the country and in orbit itself have – as far as the national legal framework is concerned – been based on the legal regime that that instrument establishes.

Armenia

[Original: English]
[24 January 2022]

Armenia welcomes the initiative of the Legal Subcommittee to support capacity-building in space law at the national, regional and international levels and stands ready to work closely with States members of the Committee in this area. Even though Armenia is taking its first steps towards becoming a spacefaring nation, we recognize the need to continue discussions on the definition and delimitation of outer space, which are becoming even more important in view of the rapid advancement of space science and technologies as well as the commercialization and resulting emergence in recent years of a number of new space actors, including non-State commercial or private ones. Armenia firmly believes that any discussion should be based on the principles of non-discrimination, freedom of use of outer space and its non-appropriation, as well as cooperation and ensuring access to space for all.

Greece

[Original: English]
[14 January 2022]

Although the Committee on the Peaceful Uses of Outer Space has discussed the issue of the definition and delimitation of outer space, no such delimitation has been established to date. Given the interdependence of the issue with the development by States of new technologies in areas such as suborbital flights, it is vital that the delimitation of outer space takes into account the existing international aeronautical regulations of the International Civil Aviation Organization. For instance, since all suborbital flights pass through airspace, suborbital vehicles should, for that part of their journey, be subject to the applicable air traffic rules (national rules or flight information region rules), in order to ensure safe, regular and efficient air transport (Convention on International Civil Aviation, art. 44, para. (d)).

Space operations and the regulation of space activities are of considerable interest to Greece, which, in addition to being a party to existing space treaties, is a State member of the European Space Agency, which regulates and unifies space regulations in the European Union.

In this respect, Greece submits the following remarks and proposals regarding the need to define and delimit outer space.

There are two prevailing views among experts: one based on a spatial approach and one based on a factual approach. However, the issue is complicated not only by the varying capacity of States to exercise their sovereignty over any part of space, but also by the prohibition of national appropriation by claim of sovereignty or by means of use or occupation, as confirmed by article II 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. Should the boundary be established on the basis of anti-satellite tests or the activities of certain States to remove and destroy their own satellites, it would be at an altitude at least equal to that of satellite orbits. This solution would not serve as a clear boundary between airspace and outer space. It would instead be preferable to adopt a functional approach, given the current state of technology and how it is predicted to develop in the future. Under this approach, space is to be considered outer space at any distance from the surface of the Earth as long as it may be used by space objects, in other words, objects capable of performing space flight. The differing nature of space activities and the fact that there is no connection with the underlying territory implies that these activities will, wherever they are conducted, be subject exclusively to the sovereignty of the launching States. Therefore, the legal regime for outer space should be determined on the basis of the capacity of space launches or the orbits of space devices at their lowest perigee (see the reply of Greece in conference room paper A/AC.105/C.2/2017/CRP.16).

Jordan

[Original: English]
[20 January 2021]

The lack of a definition or delimitation of outer space brings about legal uncertainty concerning the applicability of space law and air law. Matters concerning State sovereignty and the boundary between airspace and outer space need to be clarified in order to reduce the possibility of disputes among States.

Morocco

[Original: French]
[24 January 2022]

If the definition and delimitation of outer space is necessary and useful to the international community, it is suggested that these issues be considered by the Committee on the Peaceful Uses of Outer Space until a consensus is reached.

Furthermore, the establishment of guidelines for managing the safety of aerospace operations should be the subject of proposals to be submitted to the Committee. Indeed, this issue should be resolved at the international level because it concerns all States, in particular developing countries.

Philippines

[Original: English]
[26 January 2022]

The current Constitution of the Philippines defines its national territory as that which “comprises the Philippine archipelago, with all the islands and waters embraced

therein, and all other territories over which the Philippines has sovereignty or jurisdiction, consisting of its terrestrial, fluvial, and aerial domains, including its territorial sea, the seabed, the subsoil, the insular shelves, and other submarine areas. The waters around, between, and connecting the islands of the archipelago, regardless of their breadth and dimensions, form part of the internal waters of the Philippines."

While the Constitution does not include a definition of the "aerial domain" of the Philippines, it was proposed during the deliberations of the Constitutional Commission on the Constitution of 1987 that "[t]he aerial domain of the Philippines includes the air directly above its terrestrial and fluvial domains. All the air that lies above our land territory and our water territory belongs to us, all the way up to outer space where there is no more air (because air is a mixture of gases, and where there is only one gas – helium – there is no air). The aerial domain extends up to where outer space begins, directly over our land and water territories." However, there were objections to the proposal on the grounds of time constraints and the complexity of international laws and it was therefore not included in the current Constitution.

Aside from this, no other concrete and detailed proposals on the matter are being discussed. However, it is the view of the Philippine Space Agency that the study, exploration and use of outer space poses new legal questions which could be addressed through the definition and delimitation of outer space. Nevertheless, the Agency recognizes that these matters must be decided by consensus within the international community and after carrying out the necessary deliberations and consultations with relevant stakeholders. Furthermore, such definitions and delimitation must be responsive to advances in or changes to the current state of technology and the space sector.

Saudi Arabia

[Original: Arabic]
[21 January 2022]

The definition and delimitation of outer space has been raised as a legal issue in the Committee since 1959 and was officially included at the sixth session of the Legal Subcommittee. States have yet to agree on a globally accepted definition of outer space and airspace. The Authority's delegation representing the Kingdom on the Committee understands that there are currently three international space law approaches for defining and delimiting outer space: the spatial approach, the functional approach and the combined spatial/functional approach.

Some States members of the Committee support the functional approach. From a legal perspective, they view outer space and airspace as one space above the Earth that does not require delimitation. They suggest establishing regulatory rules for activities conducted in outer space and airspace. They do not address activities above the Earth in terms of the altitude where the activities occur, but rather in terms of the character and function of the activities. They hold that setting boundaries is neither possible nor necessary and would complicate existing activities and impede the scientific progress of outer space exploration.

Other States members of the Committee support the spatial approach. They draw attention to the main differences between the legal regimes applicable to outer space and those applicable to airspace and the implications thereof, particularly the need to define spatial boundaries and the applicability of the principle of the freedom to explore outer space, on the one hand, and the principle of the sovereignty of States over their national airspace, on the other hand.

The first treaty on outer space – the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (1967) – stipulates in its article II that outer space should not be subject to national appropriation. The Convention on International Civil Aviation (1944) provides in its article 1 for the complete sovereignty of States over the airspace

located above their territory. The national law of some States defines (delimits) the boundary between airspace and outer space at an altitude of 100 km, which is supported by most academics and is a reasonable point, provided the views of delegations in the Committee are discussed.

The definition and delimitation of outer space are important matters that help to establish a single legal regime regulating the movement of an aerospace object and to bring about legal clarity in the implementation of space law and air law, as well as clarify the responsibility of States.

Since the establishment of the Working Group on the Definition and Delimitation of Outer Space of the Legal Subcommittee in 1984, no consensus has been reached. Neither the spatial nor functional approach has enjoyed universal support. Certain member States hold that it would be appropriate to combine the two approaches by establishing international regulations that address the right of passage for space objects through foreign airspace.

Most legal experts agree that international space law delimits the lower bound of outer space as the altitude of the lowest perigee that a satellite can reach. The passage of space objects through foreign airspace, on the other hand, requires further regulation by international law, taking into account airspace regulations, protection of the sovereignty of States and encouragement of the peaceful, safe and sustainable exploration of outer space. Under the current perspective, there is no impediment to the adoption of this delimitation.

The regulation of space activities is important for the Kingdom, which has an ambitious space programme and has ratified the five international treaties and five sets of principles on space-related activities, including the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (1979), the Convention on Registration of Objects Launched into Outer Space (1975), the Agreement on the Rescue of Astronauts (1968), the Convention of the International Telecommunication Union (1992), the Agreement of the Arab Corporation for Space Communications and the Agreement Relating to the International Telecommunications Satellite Organization.

Therefore, the definition and delimitation of space must continue to be based primarily on the consensus of the States members of the Committee.

Ukraine

[Original: English]
[17 January 2022]

This issue is relevant for both Ukrainian law and international law in general. The issue should be regulated exclusively at the international legal level and implemented in the national legislation of States in order to avoid contradictions. An established border which is accepted by the majority of States must be regulated at the international legal level and become binding on the States of the world through the adoption of an appropriate legal act. A unified approach to determining the boundary between airspace and outer space at 100–110 km above the level of the ocean in the future would form a stronger basis for cooperation between States without any contradictions and would prevent conflicts over differences in States' approaches to understanding the delimitation of airspace and outer space. Ukraine, among other States in the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space (Azerbaijan, Australia, Algeria, Kazakhstan, Mexico, Thailand, etc.), supports a territorial approach to the delimitation of outer space and airspace, based on the need to clearly determine the upper limit of airspace, which would also be the lower limit of outer space. The lack of definition and delimitation of outer space causes legal uncertainty in terms of distinguishing between two completely different legal regimes (outer space and airspace). This situation, among other things, complicates the control of States over the inviolability of their sovereign rights to the national territory, part of which is airspace, making their territorial jurisdiction uncertain.

The lack of international legal regulation of this issue has led to a situation in which States have begun to determine the boundaries of the relevant areas within their national legislation, which is a harmful and even dangerous trend. Despite the fact that this issue is still on the agenda of the Legal Subcommittee and has not been decided, the lower boundary of outer space, which does not exceed 110 km above sea level, has become the norm and in practical astronautics is usually the basis for distinguishing between the two types of environments: the national sovereignty of the State does not extend to the space above the orbit of the lowest perigee of an artificial Earth satellite, specifically, 100 km ± 10 km above sea level. The existence of significant differences in the legal systems pertaining to airspace and outer space indicates the legal precondition for their delimitation, especially determining the subjects of liability under current international law, since international space law provides for the peculiarities of the implementation of international legal responsibility depending on the place (territory) of harm caused by a space object (airspace or outer space). In addition, international outer space law must be consistent with international airspace law, otherwise legal conflicts will open a wide gap for legal disputes in this area and hamper the development of suborbital astronautics. Thus, we believe that the problem of the delimitation of these two environments needs conceptual elaboration at the doctrinal level, taking into account all modern realities, including the development of suborbital astronautics.

To make a determination regarding the legal regulation of suborbital flights, it is necessary to proceed from an awareness of their characteristic properties, namely: (a) the physical achievement by the suborbital apparatus of space that has signs of space (vacuum, weightlessness), in some cases reaching Earth orbit without making a complete revolution around it; and (b) the purposes of suborbital flights: scientific purposes, which involve the study of specific features of outer space, and tourism purposes, which are also aimed at obtaining information relating to physical stress on the bodies of passengers of vessels and the subjective experience associated with a flight other than conventional air passenger traffic. Thus, the delimitation of airspace and outer space in the context of extending the legal regime inherent in each of them to suborbital flights should be carried out in view of both inherent properties (objective and subjective) and clear territorial delimitation, the basis of which is already laid down in the legal acts defining the legal regime of the adjacent space. The prospect of establishing an outer space traffic management system necessitates the delimitation of outer space, as the legal regime for the management of space objects directly in space differs in the specific natural conditions of such management and the legal regime for the use of space objects. In addition, owing to the growing amount of space debris and the practice of returning it to Earth, which is directly proportional to this process, it should be noted that according to articles II and III of the Convention on International Liability for Damage Caused by Space Objects, of 1972, liability for damage caused by space objects is divided into two parts: for damage caused on land or in the air – a territorial basis – absolute liability is established; for damage caused in outer space, responsibility is established for guilty behaviour. Thus, legal provisions relating to space traffic management and the consequences of its improper results depend entirely on the delimitation of outer space and airspace.

III. Replies received from permanent observers of the Committee

Food and Agriculture Organization of the United Nations

[Original: English]
[12 January 2021]

At this time, the Food and Agriculture Organization of the United Nations (FAO) cannot provide concrete and detailed proposals regarding the need to define and delimit outer space, or justifying the absence of such a need, nor can it provide the

Working Group with specific cases of a practical nature relating to the definition and delimitation of outer space and the safety of aerospace operations. In addition, while FAO recognizes the need for and supports the establishment of a system of space traffic management and the definition and delimitation of outer space, this topic is not in the Organization's mandate. FAO therefore has no further comments on the relationship between suborbital flights for scientific missions and/or for human transportation or on the definition and delimitation of outer space.

FAO is a major user of Earth observation satellite and space-based telecommunications and guidance systems data and services, and its work includes disaster preparedness and response, water availability and use, land cover, vegetation and ecosystem mapping and monitoring, and agricultural productivity and sustainability. Communications and geostationary Earth observation satellites, especially weather and disaster modelling and prediction systems, are crucial to understanding the Earth system, and FAO applauds and supports the continuing work of the Office for Outer Space Affairs and collaborating institutions. FAO very much appreciates the continuing work on addressing critical space-related issues.