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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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II. Replies received from States members of the Committee

Bahrain

[Original: English]

[4 January 2021]

The increasing utilization and, in particular, commercialization of high-altitude platforms, which usually operate at altitudes between those used in aviation and those used in space activities, make it necessary to clearly delimit outer space for legal purposes.

Cuba

[Original: Spanish]

[20 January 2021]

Cuba attaches great importance to matters relating to the definition and delimitation of outer space and the utilization of the geostationary orbit. No flexible and pragmatic approach can be taken unless all States, regardless of their level of scientific, technical and economic development, arrive at a commonly agreed standpoint that takes into account the views of all Member States.

The definition of outer space accepted by the International Telecommunication Union, that is, that outer space begins above the Karman line (100 km above mean sea level), should be retained, and States could delimit outer space as beginning in the suborbital space below low orbits (below 200 km). However, it would not be appropriate to delimit outer space as beginning above low Earth orbit, the limits of which are not strictly defined but are typically between 200 and 2,000 km above the Earth's surface.

If the boundary of outer space were to be defined as lying in the orbital space environment, such a delimitation would create barriers to the development and operation of orbital systems for Earth observation and communications and other systems in low Earth orbit, global navigation satellite systems (the Global Positioning System of the United States of America, the Global Navigation Satellite System of the Russian Federation, the European Satellite Navigation System of the European Union and the BeiDou Navigation Satellite System of China) and Internet transmission systems in medium Earth orbit. All of these satellite systems pass over the entire globe and therefore cross points corresponding to the territorial limits and borders of all countries. However, in the case of the geostationary orbit, in which communications and meteorological satellites are located, the trajectory of the satellites corresponds to the plane of the Earth's equator; consequently, if outer space were to be delimited, that orbit could be used only by countries located along the equator, which would limit its use by other countries.

Egypt

[Original: Arabic]

[21 January 2021]

The issue of the delimitation of the boundaries between airspace and outer space is of great importance to all countries, not only because of advances in space and aviation technology, but also because the issue is directly linked to States' sovereignty over their airspace. Achieving a clear delimitation is extremely important, as the lack of a natural boundary between outer space and airspace makes it difficult for States to maintain control over their national rights and airspace. A lack of certainty regarding which area belongs to the sovereign jurisdiction of a particular State can cause problems, with serious consequences as regards States' sovereignty over airspace. The definition and delimitation of outer space would also help to establish a single legal system regulating the movement of aerospace objects and ensure legal clarity in the

implementation of space law and air law. The absence of a definition and delimitation of outer space in international space law may lead to a divergence in the positions of States on the matter, as each State may establish its own norms and definitions in its national legislation, and these may conflict with the rules of international law.

Greece

[Original: English]
[19 January 2021]

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 wishes to submit 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).

Mexico

[Original: Spanish]
[19 January 2021]

To date, no specific situations have arisen that would merit or warrant such a delimitation.

Since the responses will be considered by the Working Group, it should be noted that, in 2019, the United States of America proposed that the issue be removed from the agenda of the Legal Subcommittee. Mexico supports that proposal given that the issue

has been on the agenda for more than 20 years without a consensus being reached. The time dedicated to consideration of the topic could then be reallocated to other issues that require attention.

Philippines

[Original: English]
[20 January 2021]

The current Constitution of the Philippines defines the country's 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."

Although the Constitution does not include a definition of the "aerial domain" of the Philippines, it was proposed during the deliberations of the Constitutional Commission regarding 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 currently being discussed. However, it is the view of the Philippine Space Agency that the study, exploration and use of outer space raise new legal questions that 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 definition and delimitation must be responsive to advances in or changes to the current state of technology and the space sector.

Spain

[Original: Spanish]
[14 January 2021]

There are numerous theories relating to the establishment of a lower limit to outer space in order to resolve many of the legal uncertainties surrounding outer space activities. Most States support the Karman line theory that the upper limit of airspace, and thus the lower limit of outer space, lies at a conventional altitude of 100 km above sea level. This is reflected, for example, in the 2019 report of the Legal Subcommittee ([A/AC.105/1203](#), para. 91): "The view was expressed that the rationale for a delimitation of outer space and airspace at between 100 and 110 km above sea level was based on comprehensive considerations including scientific, technical and physical characteristics, namely the atmospheric layers, aircraft altitude capacity, the perigee of the spacecraft and the Karman line." Other delegations, however, expressed the view that "there was no need to pursue a legal definition or delimitation of outer space, that the current framework had presented no practical difficulties and that activities in outer space were flourishing. Therefore, any attempt to define or delimit outer space would be an unnecessary theoretical exercise that could unintentionally complicate existing activities. Moreover, the result might not be adaptable to continuing technological developments" ([A/AC.105/1203](#), para. 94).

This long-standing debate is far from over (after all, it warranted the establishment of a working group of the Subcommittee), partly because it relates to space traffic management and suborbital flights. Uncertainties have also arisen in relation to pseudo-satellites (aircraft, within the meaning of the Convention on International Civil Aviation, that are located at an altitude of 20 km and could provide the same services as space objects, such as remote sensing, navigation and telecommunications), although, according to some, they should not be considered by the Working Group since they are already being studied by the International Telecommunication Union.

At its sixty-second session, the Committee on the Peaceful Uses of Outer Space only took note of the discussion of the Subcommittee and endorsed the recommendations of the Working Group, referring to paragraphs 85 and 86 and to annex II, paragraph 9, of the Subcommittee's report ([A/AC.105/1203](#)). Those recommendations included an invitation to States to submit relevant information (national legislation or any national practices that may exist or are being developed that relate directly or indirectly to the definition and/or delimitation of outer space and airspace) and to respond to a set of questions ([A/74/20](#), paras. 201–207).

Turkey

[Original: English]
[29 January 2021]

We support the view that outer space should be freely explored and used by all States on equal terms. Studies on the definition and delimitation of outer space should be evaluated within this framework.

III. Replies received from permanent observers of the Committee on the Peaceful Uses of Outer Space

Food and Agriculture Organization of the United Nations

[Original: English]
[12 January 2021]

The Food and Agriculture Organization of the United Nations (FAO) is a major user of Earth observation satellite and space-based telecommunications and guidance systems data and services, and our work includes the use of ecological, environmental, climate and habitation data in the development of predictive models for disease surveillance and control activities, particularly in relation to the coronavirus disease (COVID-19). 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 continued work of the Office for Outer Space Affairs and collaborating institutions.

At this time, FAO does not have specific comments in relation to the definition and delimitation of outer space.

International Civil Aviation Organization

[Original: English]
[20 January 2021]

The International Civil Aviation Organization (ICAO) has no proposals regarding the need to define and delimit outer space, although the ICAO Assembly, in its resolution A40-26, recognized the intersection of commercial space transport with international civil aviation and the relevance of the ICAO mandate to the phases of flight during

which space vehicles function as “aircraft” within the meaning of the Convention on International Civil Aviation.
