



**Committee on the Peaceful
Uses of Outer Space**
Legal Subcommittee
Sixtieth session
Vienna, 31 May–11 June 2021

Draft report

V. Matters relating to the definition and delimitation of outer space and the character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union

1. Pursuant to General Assembly resolution [75/92](#), the Subcommittee considered, as a regular item on its agenda, agenda item 6, which read as follows:

“Matters relating to:

“(a) The definition and delimitation of outer space;

“(b) The character and utilization of the geostationary orbit, including consideration of ways and means to ensure the rational and equitable use of the geostationary orbit without prejudice to the role of the International Telecommunication Union.”

2. The representatives of Canada, Cuba, Indonesia, Iran (Islamic Republic of), Israel, Mexico, Pakistan, the Russian Federation, South Africa and Venezuela (Bolivarian Republic of) made statements under agenda item 6. A statement was made by the representative of Costa Rica on behalf of the Group of 77 and China. During the general exchange of views, statements relating to the item were made by representatives of other member States.

3. At its 995th meeting, on 31 May, the Legal Subcommittee reconvened its Working Group on the Definition and Delimitation of Outer Space, with André João Rypl (Brazil) as Acting Chair in the absence of the Chair, José Monserrat Filho (Brazil). Pursuant to the agreement reached by the Subcommittee at its thirty-ninth session and endorsed by the Committee at its forty-third session, both held in 2000, and pursuant to General Assembly resolution [75/92](#), the Working Group was convened to consider only matters relating to the definition and delimitation of outer space.



4. The Working Group held three meetings. The Subcommittee, at its [...] meeting, on [...] June, endorsed the report of the Acting Chair of the Working Group, contained in annex II to the present report.
5. For its consideration of the item, the Subcommittee had before it the following:
 - (a) Note by the Secretariat containing information received from States members of the Committee on national legislation and practice relating to the definition and delimitation of outer space ([A/AC.105/865/Add.23](#), [A/AC.105/865/Add.24](#), [A/AC.105/865/Add.25](#) and [A/AC.105/865/Add.26](#));
 - (b) Note by the Secretariat containing replies from States Members of the United Nations and permanent observers of the Committee to questions on suborbital flights for scientific missions and/or for human transportation ([A/AC.105/1039/Add.13](#), [A/AC.105/1039/Add.14](#), [A/AC.105/1039/Add.15](#), [A/AC.105/1039/Add.16](#) and [A/AC.105/1039/Add.17](#));
 - (c) Note by the Secretariat containing views of States members and permanent observers of the Committee on the definition and delimitation of outer space ([A/AC.105/1112/Add.7](#), [A/AC.105/1112/Add.8](#), [A/AC.105/1112/Add.9](#) and [A/AC.105/1112/Add.10](#));
 - (d) Note by the Secretariat containing information relating to any practical case known that would warrant the definition and delimitation of outer space ([A/AC.105/1226](#) and [A/AC.105/1226/Add.1](#));
 - (e) Addendum to the report of the Secretariat containing a historical summary on the consideration of the question on the definition and delimitation of outer space ([A/AC.105/769/Add.1](#));
 - (f) Conference room paper on the issue of equitable access of developing Member States to the geostationary orbit, submitted by the Islamic Republic of Iran under agenda item 6 (b) of the Legal Subcommittee ([A/AC.105/C.2/2021/CRP.21](#)).
6. The view was expressed that the absence of the definition and delimitation of outer space might create legal uncertainty that could affect the application of outer space law and air law, and that the matters concerning State sovereignty over airspace and the scope of application of the legal regimes governing airspace and outer space needed to be clarified to reduce the possibility of disputes among States. The delegation expressing that view also expressed the view that the Committee should facilitate deliberations among member States on the issue of the definition and delimitation of outer space as a legal basis for States in exercising sovereignty over airspace and in conducting activities in outer space.
7. The view was expressed that the definition and delimitation of outer space was important for addressing the increased activities in outer space, including commercial activities.
8. The view was expressed that the definition and delimitation of outer space was closely linked to matters of safety and security.
9. The view was expressed that considerations in determining the delimitation of outer space at between 100 and 110 km above sea level were based on comprehensive aspects, including scientific, technical and physical characteristics, namely, atmospheric layers, the altitude capacity of aircraft, the perigee of spacecraft and the Karman line.
10. The view was expressed that there was a need to continue to analyse the topic of the definition and delimitation of outer space in order to make progress, avoid a lack of legal certainty and have legislation that would apply to acts relating to the law of outer space and air law, the exercise of sovereignty and the principle of freedom of exploration and use of outer space.

11. The view was expressed that suborbital flights, drones and other results of technological development should be subjects addressed in discussions on the definition and delimitation of outer space.
12. The view was expressed that the issues regarding the definition and delimitation of outer space had a direct impact not only on the work of the Legal Subcommittee, but also the work of the other space-related bodies such as ICAO and ITU, and that discussions on the topic should be undertaken in close cooperation with ICAO. The delegation expressing that view also expressed support for the establishment of a coordination mechanism comprising the Office for Outer Space Affairs and the ICAO secretariat.
13. The view was expressed that proclaiming the definition and delimitation of outer space should no longer be delayed, as commercial space operators were ready to undertake human space flights for commercial purposes and there had been an increase in scientific and technological advancements, including suborbital flights, related to space tourism, and that such flights had a tendency to operate in both airspace and outer space, thereby potentially creating ambiguity with regard to the applicable law.
14. The view was expressed that the need for legal regulation in relation to the delimitation of outer space and airspace, in respect of which fundamentally different international legal regimes applied, was increasing measurably, including in the context of establishing the spatial limits of the territory over which States exercised sovereignty, ensuring the national security of States and creating conditions for the long-term sustainability of operations in outer space and the safety of aircraft operations.
15. The view was expressed that no “grey zone” between airspace and outer space, including for the benefit of suborbital flights, should be established.
16. The view was expressed that proposals that had been made and discussed in the past regarding the establishment of a boundary between outer space and airspace at an altitude not exceeding 110 km above sea level and based on the assumption that a space object of any State would retain the right to fly at altitudes below the agreed boundary in order to enter orbit and return to Earth were still of relevance to the ongoing work under the agenda item.
17. The view was expressed that, given the increasing use and commercialization of outer space, the question of the definition and delimitation of outer space continued to increase in significance and was a vital legal matter with practical implications for airspace and suborbital flights, as well as activities in outer space.
18. The view was expressed that the development of an integrated regime of aerospace law, without prejudice to the national security and sovereignty of States, could help to enhance transparency and predictability, and thus ensure the safety and sustainability of outer space and aerospace operations. The delegation expressing that view also expressed the view that an agreement establishing a clear definition and delimitation of outer space and airspace would allow the Subcommittee to concentrate on developing and improving legal instruments that applied to activities that were not restricted to a single realm of space and that would provide commercial operators with the needed legal certainty and assurances.
19. Some delegations expressed the view that the definition and delimitation of outer space was an important topic that should be kept on the agenda of the Legal Subcommittee and that more work should be done in that regard, as the legal regimes governing airspace and outer space were different.
20. The Subcommittee noted that the geostationary orbit was a limited natural resource and should not be subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.
21. Some delegations expressed the view that the geostationary orbit should be used rationally and should be made available to all States, irrespective of their current

technical capacities. That would give States access to the geostationary orbit under equitable conditions, bearing in mind, in particular, the needs and interests of developing countries and the geographical position of certain countries, and taking into account the processes of ITU and relevant norms and decisions of the United Nations.

22. Some delegations expressed the view that the utilization of the geostationary orbit should be governed by applicable international law and in accordance with the principle of non-appropriation of outer space, in order to ensure guaranteed and equitable access to orbital positions in the geostationary orbit according to the needs of all countries, in particular developing countries and countries in certain geographical positions.

23. Some delegations expressed the view that the utilization by States of the geostationary orbit on the basis of “first come, first served” was detrimental to developing countries’ access to space frequencies and satellite orbits.

24. Some delegations expressed the view that it was the prerogative of ITU to ensure the rational, equitable, efficient and economical use of the radio frequency spectrum and satellite orbit resources.

25. Some delegations expressed the view that it was necessary to adjust, in close coordination with ITU, the existing practices and technical regulations of ITU in order to develop a regime guaranteeing fairer and more equitable access to the geostationary orbit for emerging and aspiring spacefaring nations.

26. The view was expressed that the geostationary orbit should be viewed as a specific and unique area of outer space needing specific technical and legal governance and thus should be regulated by a sui generis regime. The delegation expressing that view was also of the view that, for such a sui generis regime, certain legal principles should be elaborated concerning the utilization of the geostationary orbit, such as equitable access, freedom of use, non-appropriation and exclusively peaceful uses, and that the development of those principles should lay the foundation for a comprehensive legal regime that would be implemented in the form of technical regulations within the framework of ITU. In that regard, such legal principles were complementary and supported the work of ITU.

27. The view was expressed that there was close coordination between the Committee and ITU, owing to the participation of ITU as an observer in the work of the Committee and its Subcommittees.

28. Some delegations expressed the view that the Legal Subcommittee should officially invite the Radiocommunication Sector of ITU, specifically ITU-R Study Group 4 and ITU-R Working Party 4A, to cooperate on the studies related to the issue of the rational and equitable use of the geostationary orbit, and also to comment on the effectiveness and feasibility of the solutions proposed in that regard. The delegations expressing that view also expressed the view that a subtopic should be established under the corresponding agenda item of the Scientific and Technical Subcommittee, to be entitled “Review of the current utilization of the geostationary orbit from the perspective of equitable access in order to assess the capability of the current regime regulating its use to provide equitable access to it, and to propose possible solutions for observed deficiencies.” The same delegations were also of the view that the Legal Subcommittee should establish a working group under item 6 (b) of its agenda in order to better direct its efforts and activities, and that such a working group could be established as a joint initiative of both Subcommittees of the Committee, with a view to enabling them to address legal and technical aspects of the issue, as proposed in document A/AC.105/C.2/2021/CRP.21.

29. Some delegations expressed the view that it was necessary to keep the issue on the agenda of Legal Subcommittee in order to develop adequate mechanisms to ensure the sustainability of and equitable access to the geostationary orbit.

30. The view was expressed that the discussion on the matter had been exhausted, as all concerns had been reflected in the paper entitled "Some aspects concerning the use of the geostationary orbit" (A/AC.105/738, annex III), adopted by the Legal Subcommittee at its thirty-ninth session, in 2000.

31. The view was expressed that a subtopic should be established under the current agenda item focusing on analysis of equitable access to the use of the geostationary orbit and on identification of deficiencies in the current regime.

XI. General exchange of views on the legal aspects of space traffic management

32. Pursuant to General Assembly resolution 75/92, the Subcommittee considered agenda item 12, entitled "General exchange of views on the legal aspects of space traffic management" as a single issue/item for discussion.

33. The representatives of Austria, Brazil, China, France, Germany, Indonesia, Japan, Mexico, the Netherlands, the Russian Federation, South Africa, Spain, Ukraine and the United States made statements under agenda item 12. During the general exchange of views, statements relating to the item were made by representatives of other member States.

34. The Subcommittee noted that the outer space environment was becoming increasingly complex and congested, owing to the growing number of objects in outer space, the diversification of actors in outer space and the increase in space activities, and that space traffic management could be considered in that context.

35. The Subcommittee was informed of a number of measures that had been, were currently being, or were envisioned to be undertaken at the national and international levels to improve the safety and sustainability of space flight. The measures included, inter alia, the provision of spacecraft collision avoidance, re-entry and fragmentation services through the development and operation of space surveillance and tracking capabilities; the issuance of conjunction warnings as a public service; the registration of space objects; pre-launch notifications; the reporting of annual launch plans; space debris removal techniques; international coordination efforts through ITU to manage radio frequencies and geostationary orbits; the transfer of responsibilities for space flight safety support between government departments to enable access to a broader range of data and analyses through an open-architecture data repository; a policy on space traffic management rule-making; a report on requirements for on-orbit servicing; an international symposium on ensuring the stable use of outer space that focused on space traffic management and on-orbit servicing; and a space traffic management conference at the European level.

36. The view was expressed that space traffic management, which entailed developing and implementing a set of technical and regulatory provisions to promote safe access to outer space, the safety of operations in outer space and the safe return from outer space, free from physical or radio frequency interference, was of the utmost importance for maintaining outer space as a safe, stable and sustainable environment.

37. The view was expressed that the issue of space traffic management was closely connected with the notion of the sustainable use of outer space, and that without the development of an effective system of space traffic management, through regulation and monitoring, the use of outer space by future generations could not be ensured.

38. The view was expressed that, in order to safeguard the unimpeded access to outer space and its free use by everyone, there was a need for an international system of space traffic management, understood as a coherent set of technical and regulatory provisions assuring safe access to outer space, the safety of operations in outer space, and the safe return to Earth from outer space. The delegation expressing that view was also of the view that having an efficient and functional space traffic management

system was relevant for everyone because it would contribute to the protection of operational space systems and ensure the viability of private and public investments in space.

39. The view was expressed that, by implementing a space traffic management system, the international community could make efficient use of the different orbital regions as limited natural resources, promote international standards for the safety of space activities, provide for efficient communication channels and collision avoidance procedures, limit the amount of space debris and enhance the long-term, sustainable use of outer space.

40. The view was expressed that, in developing an international space traffic management framework, the following elements should be taken into account: increased requirements for information-sharing, in particular through space situational awareness programmes; incentives for international cooperation and capacity-building; common operating rules and safety standards; notification mechanisms, in particular for launches, orbital manoeuvres and re-entries; right-of-way rules; specific safety-related provisions aimed at increasing transparency and trust between States; provisions for the mitigation and disposal of space debris; and environmental regulations.

41. Some delegations expressed the view that regulatory developments must go hand in hand with technical, operational and coordination developments in outer space activities, and that only parallel and complete development in all those areas would allow space congestion and space traffic management to be addressed optimally and effectively.

42. The view was expressed that the initial challenge associated with space traffic management was in establishing a clear and uniform definition of the term, and that it was essential to agree on a definition and have a common understanding of what constitutes space traffic management before being able to consider the possible establishment of a space traffic management mechanism.

43. The view was expressed that, in terms of the rules applicable to space traffic management, at the current stage, a pragmatic approach should be pursued, based on the timely adoption of guidelines, standards and transparency and confidence-building measures, and that the development of such guidelines, standards and measures must be done gradually and incrementally at the international level and exclude, for the time being, the development of any binding rules.

44. The view was expressed that, given the serious asymmetry of information and capabilities in relation to space traffic management, the first step should be to comprehensively collect and analyse information on the practices of States and the international rules involved, and that, in particular, countries with well-developed practices should strengthen transparency and information-sharing, rather than rushing to carry out theoretical, premature discussions on complex and far-reaching issues.

45. The view was expressed that, in order to show respect for the equal rights of developing countries, workshops and other meetings should be held to promote the understanding of space traffic management by emerging space actors, so that they can participate in discussions on the topic more extensively and substantively.

46. The view was expressed that, as many complicated and sensitive policy, technical and legal issues were involved in space traffic management, dialogue and communication were needed to promote friendly cooperation and mutual trust among States, and that discussions on space traffic regimes should be carried out in the spirit of multilateralism.

47. The view was expressed that, given that the malfunctioning of space infrastructure could result in significant societal and economic damages, the topic of space traffic management could be, and in some jurisdictions already was, included in legal frameworks on critical infrastructure.

48. The view was expressed that, as objects operating in outer space must first transit through airspace, there was ongoing concern regarding the handling of space traffic in airspace, in particular because there was no agreed definition or delimitation of outer space.
49. The view was expressed that the rules on responsibility related to space traffic management were not clear and that that had resulted in a worrying absence of rules on priority.
50. The view was expressed that the impact of large constellations on radioastronomy and optical astronomy was a topic of relevance to space traffic management that required the attention of the Legal Subcommittee, with a view to providing guidance on legal models that would reap mutual benefits. In that connection, the delegation expressing that view recalled the recommendations to keep dark and quiet skies for science and society that had been before the Scientific and Technical Subcommittee at its fifty-eighth session (see A/AC.105/C.1/2021/CRP.17), in particular the recommendations regarding non-geostationary orbit satellites.
51. The view was expressed that, in acknowledgment of both its importance in dealing with the global space economy and its cross-cutting nature, delegations should reflect on whether the consideration of space traffic management by both the Scientific and Technical Subcommittee and the Legal Subcommittee would enable a more comprehensive approach to addressing the topic.
52. The view was expressed that the implementation of the Guidelines for the Long-term Sustainability of Outer Space Activities of the Committee on the Peaceful Uses of Outer Space should be supported in the context of discussions on space traffic management, accompanied by an emphasis on efforts to share information and coordinate among space actors internationally to increase space situational awareness on a global scale.
53. The view was expressed that the Legal Subcommittee, together with the Scientific and Technical Subcommittee, should consider approaches that would lead to the creation of an international system or mechanism to harmonize space situational awareness and space traffic management practices and approaches, as the lack of internationally agreed standards and approaches was a matter of serious concern, not only because of the possibility of collisions or interference between space objects, but also because, in the absence of information, the interpretation of incidents would be left to perception, and therefore the creation of an international mechanism could play an important role in promoting transparency and building confidence among space actors.
54. The view was expressed that, along with an international legal framework for space traffic management, a United Nations-based information-sharing mechanism should be established comprising a database on space objects and events.
55. The view was expressed that, if there was a serious desire to address the existing problems within the framework of space traffic management, the proposal to create a United Nations information platform (see A/AC.105/2016/CRP.13) should be revisited, as the information platform had been proposed as a mechanism for integrating the efforts of States, international intergovernmental organizations, spacecraft operators and specialized national and international non-governmental organizations in collecting, systematizing and providing for the general use and analysis of information on objects and events in outer space.