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Annex II

Terms of reference and methods of work of the Working Group on the Long-term Sustainability of Outer Space Activities of the Scientific and Technical Subcommittee

I. Introduction

1. In The Space Millennium: Vienna Declaration on Space and Human Development,[1] the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space recognized the importance of space science and space applications for improving our fundamental knowledge of the universe, and improving the daily lives of people worldwide through environmental monitoring, management of natural resources, early warning systems to help mitigate potential disasters and support disaster management, meteorological forecasting, climate modelling, satellite navigation and communications. Space science and technology make a major contribution to the well-being of humanity, and specifically to achieving the objectives of global conferences of the United Nations that address various aspects of economic, social and cultural development. Space activities therefore play a vital role in supporting sustainable development on Earth and the achievement of the Millennium Development Goals. Hence, the long-term sustainability of space activities is a matter of interest and importance not only for current and aspiring participants in space activities, but also for the international community as a whole.

2. The space environment is being used by more and more States, non-governmental organizations and private sector entities. The proliferation of

[1] *Report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 19-30 July 1999* (United Nations publication, Sales No. E.00.I.3), chap. I, resolution 1.

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space debris and the increased possibilities of collisions and interference with the operation of space objects raise concerns about the long-term sustainability of space activities, particularly in the low-Earth orbit and geostationary orbit environments.

3. The Committee on the Peaceful Uses of Outer Space, through its work in different fields, has a significant role to play in examining and enhancing the long-term sustainability of outer space activities in all its aspects. In 2009, at its fifty-second session, the Committee decided that the Scientific and Technical Subcommittee should include on its agenda, starting from its forty-seventh session, in 2010, an item entitled "Long-term sustainability of outer space activities".[2]

4. At its forty-seventh session, the Subcommittee recalled the importance of ensuring the safe and sustainable future use of outer space and noted, in accordance with the workplan related to this item, that a working group should be established to support the preparation of a report on the long-term sustainability of outer space activities, the examination of measures that could enhance the long-term sustainability of such activities and the preparation of an appropriate set of voluntary best-practice guidelines (hereinafter "the guidelines") focused on practical and prudent measures that could be implemented in a timely manner to enhance the long-term sustainability of outer space activities.

5. At its 735th meeting, on 18 February 2010, the Subcommittee established the Working Group on the Long-term Sustainability of Outer Space Activities.

6. A meeting of the Working Group was held during the fifty-third session of the Committee on the Peaceful Uses of Outer Space with a view to further developing its terms of reference and a method of work.[3]

7. The working paper containing the proposal of the Chair for the terms of reference, method of work and workplan for the Working Group was before the Committee as document A/AC.105/L.277.

II. Terms of reference

8. The Working Group will examine the long-term sustainability of outer space activities in the wider context of sustainable development on Earth, including the contribution to the achievement of the Millennium Development Goals, taking into account the concerns and interests of all countries, in particular those of developing countries, and consistent with the peaceful uses of outer space.

9. The work will take into consideration current practices, operating procedures, technical standards and policies associated with the long-term sustainability of outer space activities, including, inter alia, the safe conduct of space activities throughout all the phases of the mission life cycle.

10. The Working Group will take as its legal framework the existing United Nations treaties and principles governing the activities of States in the exploration and use of outer space, in particular article VI of the Treaty on

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[2] *Official Records of the General Assembly, Sixty-fourth Session, Supplement No. 20* (A/64/20), para. 161.

[3] A/AC.105/958, paras. 181 and 183.

Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (the "Outer Space Treaty"), which was adopted by the General Assembly in its resolution 2222 (XXI)), opened for signature on 27 January 1967 and entered into force on 10 October 1967.[4]

III. Objective and outputs

11. The objective of the Working Group will be to identify areas of concern for the long-term sustainability of outer space activities, examine and propose measures that could enhance sustainability in all its aspects, including the safe and sustainable use of outer space for peaceful purposes, for the benefit of all countries.

12. The Working Group will prepare a report on the long-term sustainability of outer space activities containing a consolidated set of current practices and operating procedures, technical standards and policies associated with the long-term sustainability of outer space activities, including, inter alia, the safe conduct of space activities. On the basis of all the information collected, the Working Group will aspire to produce the guidelines, which could be applied on a voluntary basis by States, either individually or collectively, international organizations, national non-governmental organizations and private sector entities to reduce the risks to the long-term sustainability of outer space activities for all participants in those activities and to ensure that all countries are able to have equitable access to outer space and the resources and benefits associated with it. The report and the guidelines shall be submitted to the Scientific and Technical Subcommittee for its consideration.

13. The guidelines should:

(a) Create a framework for possible development and enhancement of national and international practices pertaining to enhancing the long-term sustainability of outer space activities, including, inter alia, the improvement of the safety of space operations and the protection of the space environment, giving consideration to acceptable and reasonable financial and other connotations and taking into account the needs and interests of developing countries;

(b) Be consistent with existing international legal frameworks for outer space activities, referred to in paragraph 10 above, and should be voluntary and not be legally binding;

(c) Be consistent with the relevant activities and recommendations of the Committee and its Subcommittees, as well as of other working groups thereof, United Nations intergovernmental organizations and bodies and the Inter-Agency Space Debris Coordination Committee and other relevant international organizations, taking into account their status and competence.

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[4] United Nations, *Treaty Series*, vol. 610, No. 8843.

IV. Scope

14. Topics for examination by the Working Group under this agenda item could include:

(a) Sustainable space utilization supporting sustainable development on Earth:

(i) The contribution of space science and technology to sustainable development on Earth, early warning of potential disasters and support for management of disaster-related activities;

(ii) The concept of sustainable development extended to the domain of outer space, including the avoidance of harmful contamination of celestial bodies;

(iii) Equitable access to outer space and to the resources associated with it, as well as to the benefits of outer space activities for human development;

(iv) International cooperation in peaceful uses of outer space as a means of enhancing the long-term sustainability of outer space activities and supporting sustainable development on Earth;

(b) Space debris:

(i) Measures to reduce the creation and proliferation of space debris;

(ii) Collection, sharing and dissemination of data on functional and non-functional space objects;

(iii) Re-entry notifications regarding substantial space objects, and also on the re-entry of space objects with hazardous substances on board;

(iv) Technical developments and possibilities regarding space debris removal;

(c) Space weather:

(i) Collection, sharing and dissemination of data, models and forecasts;

(ii) Capabilities to provide a comprehensive and sustainable network of sources of key data in order to observe and measure phenomena related to space weather in real or near-real time;

(iii) Open sharing of established practices and guidelines to mitigate the impact of space weather phenomena on operational space systems;

(iv) Coordination among States on ground-based and space-based space weather observations in order to safeguard space activities;

(d) Space operations:

(i) Collision avoidance processes and procedures;

(ii) Pre-launch and manoeuvre notifications;

(iii) Common standards, practices and guidelines;

(e) Tools to support collaborative space situational awareness:

(i) Registries of operators and contact information;

(ii) Data centres for the storage and exchange of information on space objects and operational information;

(iii) Information-sharing procedures;

(f) Regulatory regimes:

(i) Adherence to existing treaties and principles on the peaceful uses of outer space;

(ii) Review of the regulatory framework and the tools for the use and transfer of space technologies within international cooperation and international turnover of controlled space-related goods;

(iii) National regulatory frameworks for space activities;

(g) Guidance for actors in the space arena:

(i) Technical standards, established practices and the acquired experience for the successful development and operation of space systems throughout all the phases of the mission life cycle for all classes of space objects, including microsatellites and smaller satellites;

(ii) Technical and legal capacity-building for developing countries.

15. The above topics could be clustered to allow more efficient consideration of related matters. Topics could also be prioritized in terms of the need for action in the near term (less than 3 years), medium term (3-5 years) and long term (more than 5 years). One way to consider the topics could be to determine the risk factors posed to the sustainability of outer space activities under each topic and then perform a risk assessment of those risk factors.

V. Method of work

16. The Working Group will invite contributions from States members of the Committee, as well as invite contributions from and/or consider and decide on appropriate liaison with, United Nations intergovernmental bodies, such as the Conference on Disarmament, the group of governmental experts on transparency and confidence-building measures in space activities to be established in implementation of General Assembly resolution 65/68, the Commission on Sustainable Development, the International Civil Aviation Organization, the International Telecommunication Union and the World Meteorological Organization, and relevant intergovernmental organizations, such as the European Space Agency, the European Organization for the Exploitation of Meteorological Satellites, the Asia-Pacific Space Cooperation Organization and the Group on Earth Observations.

17. The Working Group will invite contributions and consider inputs of information from international organizations and bodies, such as the Consultative Committee for Space Data Systems, the Inter-Agency Space Debris Coordination Committee, the International Space Environment Service, the International Organization for Standardization, the International Academy of Astronautics, the International Astronautical Federation and the Committee on Space Research. It is understood that inputs of national non-governmental organizations and private

sector entities will be obtained through relevant States members of the Committee. The Working Group will decide on the inputs to be incorporated into its work.

18. The Working Group should avoid duplicating the work being done within these international entities and should identify areas of concern relating to the long-term sustainability of outer space activities that are not being covered by them.

19. The Working Group will take into account discussions within the Committee and its Subcommittees on the long-term sustainability of outer space activities, as well as progress made by the other working groups of the Subcommittees. Efforts should take into account, but not duplicate or reopen, the activities and recommendations being undertaken in the Working Group on the Use of Nuclear Power Sources in Outer Space and the work of the Subcommittee and the Inter-Agency Space Debris Coordination Committee on orbital debris mitigation.

20. If, during the examination of topics within the scope of the Working Group, there are new issues raised that were not previously addressed by the Subcommittee or its related working groups, the Working Group may decide to raise such issues to the Subcommittee for further consideration.

21. The Working Group will meet during the annual sessions of the Scientific and Technical Subcommittee. The Working Group will also use opportunities provided by intersessional coordination events, such as meetings, teleconferences, electronic meetings and workshops, as feasible and agreed.

22. The Working Group may decide to establish expert groups to focus on one or more of each of the agreed areas of work in order to expedite the work of the Working Group as a whole.[5] The expert groups would meet on the margins of and/or during the sessions of the Scientific and Technical Subcommittee and the Committee, and at other times to be agreed in advance by the expert groups, preferably at the session of the Scientific and Technical Subcommittee. The expert groups will likewise use opportunities provided by intersessional coordination events as provided for in paragraph 21 above and as agreed by the Working Group. States members of the Committee and intergovernmental organizations with permanent observer status with the Committee would be invited to nominate experts to participate in the activities of the expert groups. The expert groups would agree on the appropriate status, reliability and relevance of the information to be provided to support the deliberations of the Working Group, which would consider inputs received and make any necessary decisions regarding those inputs.

VI. Multi-year workplan

23. The indicative workplan under the item “Long-term sustainability of outer space activities” for the period 2011-2014 will be as follows:

2011 Develop terms of reference, method of work and workplan. Identify a point of contact for each State member of the Committee represented in the Working Group. Review the work done to date on this issue and prioritize future tasks. Invite States members of the Committee and, subject to the observance of relevant provisions

[5] See A/AC.105/987, annex IV, paras. 8-11.

of paragraphs 16 and 17 above, organizations having permanent observer status with the Committee and experience in space activities to provide information in 2012 on their experiences and practices that might relate to the long-term sustainability of outer space activities and on how they envisage work under the topic. Establish on a provisional basis the expert groups and commence preliminary planning of their activities for 2012.

2012 Hold a general exchange of views among States members of the Committee and intergovernmental and non-governmental organizations having permanent observer status with the Committee on the topics encompassed within the scope of work. Invite States members of the Committee to provide inputs from their national non-governmental organizations and private sector entities. Hold a workshop at which States members of the Committee and intergovernmental and non-governmental organizations having permanent observer status with the Committee provide information on their experiences and practices in the conduct of sustainable space activities (presentations and discussions to be conducted in the official languages of the United Nations). Hold consultations at the session of the Scientific and Technical Subcommittee and during the intersessional period with States members of the Committee and with intergovernmental and other international organizations having experience in space activities and those considering or initiating involvement in space activities to provide information on established practices and proposed measures to enhance the long-term sustainability of outer space activities. Commence consolidation of information gathered. Initiate development of a draft outline of the report to be produced by the Working Group.

2013 Encourage States members of the Committee to review and assess domestic practices regarding all aspects of enhancing sustainability of outer space activities. Invite States members of the Committee to include in their delegations representatives of national non-governmental organizations and of private sector entities having experience in space activities to provide information on their experiences and practices in the conduct of sustainable space activities at a workshop to be held in conjunction with the fiftieth session of the Subcommittee (presentations and discussions to be conducted in the official languages of the United Nations). Develop a draft report and an outline of the draft set of best-practice guidelines for submission to the Subcommittee in 2014.

2014 Consider the draft report and the draft guidelines at the Subcommittee’s fifty-first session. Finalize the report and the set of best-practice guidelines for presentation to and review by the Committee. Determine whether the workplan should be extended to cover potential future work. If the workplan is not extended, discontinue the Working Group.