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Future role and activities of the Committee on the Peaceful Uses of Outer Space

Working paper submitted by the Chairman**

I. Introduction

1. During its forty-ninth session, held from 7 to 16 June 2006, the Committee on the Peaceful Uses of Outer Space considered the question of its future role and activities and agreed that its Chairman could conduct intersessional, open-ended informal consultations with a view to presenting to it a list of elements that could be taken into consideration at its next session.[1] This agreement by the Committee was noted with satisfaction by the General Assembly in paragraph 47 of its resolution 61/111 of 14 December 2006.

2. This working paper is the result of a series of informal consultations by the Chairman that took place during the period from July 2006 to mid-April 2007. The informal, open-ended consultations on the future role and activities of the Committee took place in three main phases described below. The consultations were based on the premise that the terms of reference of the Committee do not need to be modified.

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* A/AC.105/L.267.

** This document was not submitted within the period required by the 10-week rule due to informal consultations during and after the forty-sixth session of the Legal Subcommittee of the Committee on the Peaceful Uses of Outer Space, held from 26 March to 5 April 2007.

[1] *Official Records of the General Assembly, Sixty-first Session, Supplement No. 20* (A/61/20), para. 297.

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3. Phase 1 took place from July to November 2006 and included reflections and interactions with actors of the Committee as well as with non-governmental organizations active in space affairs.

4. Phase 2 lasted from December 2006 to mid-February 2007. It started with the drafting of a first version of an informal memorandum on the future role and activities of the Committee. Version 1 of the memorandum was circulated in January 2007 by electronic distribution to members of the "G-15" (the group of past, present and future bureau members of the Committee and its Subcommittees) and to the presidents of the International Academy of Astronautics (IAA), the International Astronautical Federation (IAF), the Committee on Space Research (COSPAR) and the International Institute of Space Law (IISL). In addition, the memorandum was presented to the delegations of member States of the European Space Agency (ESA) during an ad hoc meeting held in Paris on 11 January 2007 at the initiative of the French delegation. Phase 2 concluded with the distribution of the memorandum to delegations at the forty-fourth session of the Scientific and Technical Subcommittee, in February 2007. Many responses, comments and additional suggestions were received regarding version 1 of the memorandum, which led to the development of a version 2, dated 20 February, which attempted to integrate as much as possible those very useful contributions.

5. Phase 3 included the distribution of version 2 of the memorandum to all contributors who had received version 1 and further distribution during the forty-sixth session of the Legal Subcommittee, in late March 2007.

6. The present working paper integrates additional comments and suggestions received since the beginning of April 2007. The Chairman would like to express his deep appreciation to the many delegations to the Committee that contributed useful comments during the development of this document, in particular, the delegations of Algeria, Austria, Belgium, Canada, Chile, Colombia, France, Hungary, India, Italy, Nigeria and the United States of America. The Chairman also wishes to address his sincere thanks to Roger-Maurice Bonnet, President of COSPAR, James V. Zimmermann, President of IAF, John M. Logsdon, Director of the Space Policy Institute at George Washington University and Roy Gibson, former Director General of ESA, for their kind and thoughtful contributions.

II. Activities of the Committee in the future

7. Over the past seven years, following the major event of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III), in 1999, the Committee has addressed a wide range of issues and achieved concrete results in a number of areas related to its fundamental objective of promoting international cooperation in the peaceful uses of outer space, taking into particular account the needs of developing countries. For example, action teams set up after UNISPACE III have produced in-depth analysis of certain areas of space applications, leading to the establishment of the International Committee on GNSS (ICG) and to the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (SPIDER), now in its implementation phase, within the Office for Outer Space Affairs of the Secretariat. Significant work was

also done and continues today in the areas of near-Earth objects and tele-health applications.

8. Also, major progress has taken place in the field of space debris mitigation via the Working Group on Space Debris, established by the Scientific and Technical Subcommittee, building on years of technical work within the Inter-Agency Space Debris Coordination Committee (IADC), leading to the development of space debris mitigation guidelines, which were adopted by the Scientific and Technical Subcommittee during its forty-fourth session and have been submitted for approval by the Committee at its fiftieth session. The ongoing joint efforts of the Working Group on the Use of Nuclear Power Sources in Outer Space, established by the Scientific and Technical Subcommittee, and the International Atomic Energy Agency will lead, by 2010, to a robust set of safety standards for future nuclear power sources in outer space, thus demonstrating an excellent ability to work together with other international organizations.

9. In parallel, the Committee has continued its work on certain implementation aspects of the legal regime on outer space, such as General Assembly resolution 55/115 of 10 December 2004, on the application of the concept of the "launching State", and the Working Group on the Practice of States and International Organizations in Registering Space Objects, established by the Legal Subcommittee. The Legal Subcommittee agreed during its forty-sixth session, in 2007, on a set of elements of conclusions of the Working Group on the Practice of States and International Organizations in Registering Space Objects, with the potential of becoming a draft General Assembly resolution, which is to be discussed and hopefully agreed upon by the Committee during its fiftieth session. Furthermore, at their respective sessions in 2007, both the Scientific and Technical Subcommittee and the Legal Subcommittee agreed to include new and promising items on their agenda.

10. Delegations can therefore be proud of the recent achievements of the Committee and look forward to an active and exciting role in the future.

11. Looking towards the future with a long-term view, delegations will recall the keynote speech made by Karl Doetsch, former Chairman of the Scientific and Technical Subcommittee, during the forty-eighth session of the Committee, in June 2005. In his overview, he reviewed the historical role played by the Committee and its achievements. He formulated recommendations for its future role in the light of the evolving landscape of space activities worldwide, of the increasing number of States taking part in space activities and commercial space operators, of the impact of the various space exploration initiatives and of the expectations of the younger generation.

12. Indeed, the Chairman of the Committee for the two-year period from June 2006 to June 2008 shares the view that the Committee needs to continue to play a major role in shaping the international standards for space activities and in promoting international cooperation for the benefit of all countries in many areas of space research, space applications, space operations and space exploration.

13. The Committee has made considerable achievements in addressing the vision inherent in the outcome of UNISPACE III. Through its multi-year work on the implementation of the recommendations of UNISPACE III, the Committee has demonstrated the importance of the role that space science and technology and their

applications can play in meeting challenges to all humankind. It would be useful, in this regard, for the Committee to continue and further advance its efforts by taking a deeper look at the longer-term issues facing the future peaceful uses of outer space and identify where the Committee can best contribute to the sustainability of space activities and to the further progress of space applications for the benefit of humankind, as well as new outer space ventures such as in solar system exploration and scientific endeavours.

14. The list of elements below, submitted for the consideration of the Committee, results from the informal, open-ended consultation process described above and is in no way exhaustive. It may very well need to be completed and amended, based on reactions and additional suggestions from delegations.

A. Contribution of space systems to a better understanding and to global monitoring of the planet Earth

15. Space technology has contributed for over 40 years to observing the atmosphere, the oceans, the land masses and, indirectly, the interior of the planet Earth. The effectiveness and global reach of remote sensing technology and other space-based technologies, including data for positioning/navigation and data relay by satellite, are well known. Most members of the Committee are either operators of satellite observation systems or major users of data from such systems or, very often, both.

16. Many international coordination mechanisms are already in place to maximize the value of Earth observation and monitoring from space, such as the space programme of the World Meteorological Organization (WMO), the Committee on Earth Observation Satellites and the Integrated Global Observing Strategy Partnership. In 2003, the formation of the international Group on Earth Observation (GEO) to develop a Global Earth Observation System of Systems (GEOSS) extended the international coordination to non-space-based observation networks and took on board new disciplines such as biodiversity, energy and health.

17. In view of the realization that global warming is indeed taking place and that human activities are probably responsible for it and the need to develop a collective mitigation strategy, the Committee should consider how it can contribute to encouraging and facilitating the use of space systems to understand and monitor the changes affecting the planet Earth. In 2007, the Scientific and Technical Subcommittee at its forty-fourth session agreed to include, under its regular agenda item on remote sensing of the Earth by satellite, annual presentations by the secretariat of GEO on the status of GEOSS. The Committee could formally invite the Director of the GEO secretariat to report to the Scientific and Technical Subcommittee at each of its yearly sessions and, based on those reports, consider any action that the Committee could take to facilitate and enhance the contribution of space systems to major challenges facing humankind. Such regular presentations would be an opportunity for member States of the Committee to receive up-to-date information on the status of implementation of the 10-year GEOSS workplan and potentially facilitate their participation.

18. *Suggested decision*: invite the Director of the GEO secretariat to report on an annual basis to the Scientific and Technical Subcommittee. On the basis of those

reports, the Committee could identify measures that might facilitate or enhance the use of space systems for the sustainable management of the planet Earth.

B. Coordination of global navigation satellite systems

19. As a result of the work of the Action Team on Global Navigation Satellite Systems, set up after UNISPACE III, ICG was established. ICG held its first meeting in Vienna in November 2006. The second meeting of ICG is to be held in Bangalore, India, in September 2007. It is to be noted that ICG includes a large number of non-governmental organizations involved in setting standards on the use of satellite navigation signals and promoting new applications. This is a very significant achievement of the UNISPACE III follow-up process, of which the members of the Committee can be proud.

20. In 2007, the Scientific and Technical Subcommittee at its forty-fourth session endorsed the recommendation of the Working Group of the Whole to include as a regular agenda item, starting with its forty-fifth session, recent developments in global navigation satellite systems (A/AC.105/890, para. 170 and annex I, para. 19), with a view to considering issues related to ICG, the latest developments in the field of global navigation satellite systems (GNSS) and new GNSS applications. The Committee could formally invite the Chairman of ICG to report annually to the Scientific and Technical Subcommittee on the progress of the ICG activities. In addition, the Committee could invite the ICG Chairman to report to the Legal Subcommittee on legal aspects of the delivery of global satellite navigation services addressed within ICG. Delegations could also take that opportunity to report on GNSS activities in their own countries. Based on those reports, the Scientific and Technical Subcommittee and the Legal Subcommittee could develop, as needed, recommendations to the Committee on further actions that would maximize the benefits of satellite navigation systems to the global user community.

21. *Suggested decisions*: invite the ICG Chairman or his or her alternate to report to the Scientific and Technical Subcommittee, at its annual session, on the activities of ICG. Invite the ICG Chairman or his or her alternate to report to the Legal Subcommittee on legal issues associated with increased use of navigation and/or time synchronization services delivered by GNSS operators.

C. Contribution of satellite technology to sustainable development

22. Space technology is providing more and more services to the global community, for telecommunication to fixed and mobile terminals, for broadcasting audio and television programmes, for tele-health and tele-education programmes, for environmental data collection, for search and rescue operations, for navigation and positioning, for weather forecasting, for monitoring ocean conditions, for topographic and land-use surveys, for agriculture, forestry and water resource management etc.

23. The contribution of operational satellite-based systems to the world economy and to sustainable development has become very significant. In its plan of action on the implementation of the recommendations of UNISPACE III (A/59/174, sect. VI.B), the Committee decided to contribute actively to the work of the

Commission on Sustainable Development under the multi-year programme of work of the Commission in implementing the outcome of the World Summit on Sustainable Development held in Johannesburg in 2002. The contributions by the Committee to the work of the Commission, in addressing the role of space in sustainable development, provide excellent indications of the relevance of space science and technology and their applications to development issues. In order to make this strategy even more efficient, the Committee could call upon a constantly updated database of successful applications to illustrate the many contributions of space technology.

24. It is suggested that the Scientific and Technical Subcommittee or the Committee should invite reputable international experts to come to its sessions and present high-level overviews of recent progress made in space applications. The value of such regular presentations would be enhanced if they were made by experts from developing countries and by representatives for regional activities and programmes using space applications. Many developing countries have very active and successful space application programmes, which are often the subject of presentations in the scope of the sessions of the Scientific and Technical Subcommittee or the Committee, but seldom is a general overview available. Presenting such high-level overviews under a regular item on the agenda of the Scientific and Technical Subcommittee would reinforce and complement the database of successful space applications, which the Committee needs.

25. *Suggested decision*: invite various international organizations oriented towards space applications, such as the International Telecommunication Union (ITU), WMO and the World Health Organization, and non-governmental international associations such as the International Society for Photogrammetry and Remote Sensing, the International Geoscience and Remote Sensing Symposium or IAF to present to the Committee and its Subcommittees high-level overviews of recent developments in space applications. It is recommended to give priority to speakers from developing countries, to the extent possible. It is also recommended that special attention be given to the practical applications of space science and technology, including at the regional level.

D. Long-term sustainability of space activities

26. The excellent work done by the Scientific and Technical Subcommittee during the last few years on space debris mitigation has demonstrated that a safe environment for space activities is no longer a given if one takes a long-term view. Not only is the space debris situation of concern to all, but the ever larger number of actors in space, including the commercial actors, makes it imperative to agree on some kind of “rules of the road” to avoid interference, collisions and other mishaps that may hamper the use of outer space by all, particularly by the newcomers in space operations. There is a need not to modify the present treaty regime but instead to develop recommendations to deal with the new realities of space operations.

27. It would be an excellent sign of the ever more active role taken by the Committee to take up the issue and start discussing how and in which framework such “rules of the road” could be developed. One possible approach would be to set up a working group within the Scientific and Technical Subcommittee and ask the

working group to produce, in consultation with relevant intergovernmental organizations such as ITU, a technical assessment of the situation and to suggest a way forward. Member States, international organizations and commercial operators of large fleets of communication satellites could be invited to report on policies and practices that they have undertaken to make their space operations more orderly and safe.

28. Also, the working group could look at the treaties and principles to see what provisions are relevant to space operations (for example, registration, notification in the event of an unplanned re-entry of a space object with a nuclear power source on board, assistance in the event of an emergency situation for astronauts). The Committee would then decide how it wants to proceed, including the necessary legal input from the Legal Subcommittee. The Cosmic Study on Space Traffic Management, presented by IAA to the Committee during its forty-ninth session, in June 2006, could provide an excellent starting point.

29. *Suggested decision*: include the issue of "Analysis of the concept of 'rules of the road' for future space operations" as a new item on the agenda of the Scientific and Technical Subcommittee; recommend that the Scientific and Technical Subcommittee set up a working group to examine the possible approaches to that issue; invite ITU and the International Civil Aviation Organization to participate actively in the working group; organize interaction with commercial space operators in order to collect their views and learn from their experiences; and report to the Committee by 2009 on the various avenues and possibilities to develop, on a consensus basis, such "rules of the road" and recommend the way forward.

E. International cooperation in space exploration

30. The new interest shown by many nations for ambitious space exploration programming calls for the development of a set of recommendations to encourage international cooperation in such space exploration activities. The recommendations would aim at facilitating participation by interested States, even at a very modest level, for example by creating possibilities for their students and young professionals to become part of investigator teams.

31. By taking an initiative without forcing any nations beyond their usual policy, the Committee could play a significant role in helping countries that are not directly involved in space exploration activities to become part of that great venture with limited investment. The Committee could also work to demonstrate the value of space exploration to the general public and to encourage national and international education programmes relating to space exploration. In this regard, the Committee could work with the United Nations Educational, Scientific and Cultural Organization, the Space Generation Advisory Council, IAF, the International Space University, others having permanent observer status with the Committee and other non-governmental entities.

32. *Suggested decision*: invite IAF to consider the issue of the participation by developing countries in space exploration initiatives and projects; and ask IAF to report to the Committee in 2008 and recommend various mechanisms to encourage such participation.

F. Protection/conservation of designated areas of the Moon and other bodies of the solar system

33. In view of the development of space exploration and in particular the renewed interest in the Moon as a first stage of exploration, there is a need for a fresh approach to the idea of protecting designated areas of such bodies of the solar system, either because of their historical, cultural and environmental significance (such as the Apollo, Surveyors and Lunakhod landing sites on the Moon) or because there are good reasons for wanting to protect certain areas of scientific interest. This concept could also be applied to certain parts of outer space itself such as the Lagrange points (sometimes called libration points) in the Earth-Moon or the Sun-Earth system.

34. One practical way for the Committee to consider this idea without actually taking it up as a formal agenda item at this stage would be to request some of the organizations having permanent observer status with the Committee, such as COSPAR and IAA, to produce an independent study and develop appropriate recommendations.

35. *Suggested decision*: invite COSPAR and IAA to consider the issue of protection/conservation of designated areas on the Moon and other bodies of the solar system and report back to the Committee by 2010 with appropriate recommendations on the legal aspects, as well as the scientific and technical aspects, of a protection/conservation policy that might be adopted by consensus at the international level.

G. Issues related to the development of "passenger space transport"

36. The development of commercial transport of paying customers into outer space, either for a very brief journey aboard a suborbital vehicle such as "SpaceShipOne" or for longer journeys on board an orbiting space station, brings a new element to the general public's interest in space. Also, future progress in space transportation technologies may one day allow intercontinental long-distance commercial transport of passengers via "space planes" following a ballistic trajectory for part of their journey.

37. Here, as in the above items, a thorough analysis of the state of the art could be of interest as individual States consider their own policies and regulatory frameworks. The Committee could play a useful role in taking a long-term view of such developments and in considering if and how new legal and technical standards need to be developed.

38. *Suggested decision*: invite IISL and IAA (with support, as needed, from IAF) to consider the non-technical aspects of future commercial space transport systems, to propose a long-term view of such developments and to report back to the Committee by 2010.

H. Near-Earth Objects

39. Recently, many studies have been devoted to near-Earth objects and the potential threat that they represent to the Earth and therefore humankind. While it is up to the international scientific community to study those objects and assess the probability of a devastating collision with the planet Earth, it is up to the community of nations to look at what mechanism needs to be set up in order to be able to collectively take decisions leading to concrete action against such a threat.

40. The Action Team on Near-Earth Objects, set up after UNISPACE III, recently produced a progress report (A/AC.105/C.1/L.290), and a three-year workplan was adopted by the Scientific and Technical Subcommittee during its forty-fourth session. Also, the Association of Space Explorers has organized specific workshops on this topic. The Committee would certainly benefit from reports on their conclusions and recommendations.

41. *Suggested decision*: encourage the Action Team on Near-Earth Objects to continue its work according to the three-year workplan endorsed by the Scientific and Technical Subcommittee in the report on its forty-fourth session (A/AC.105/890, para. 125 and annex III) and produce its report with a view to addressing clear recommendations to the Committee on which course to follow for further action at the international level.

III. Conclusions

42. The above set of elements suggested for consideration by the Committee and for action during the next few years is certainly not complete and will have to be continuously updated and enriched as required by the evolution of technology and by the emergence of new space applications.

43. What is important is for the Committee to remain attentive to the evolving needs of the space-faring nations and of their many actors, public and private, as well as the increasing expectations from nations that do not have active space programmes but need the benefits from space activities.