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Committee on the Peaceful Uses of Outer Space
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Draft report

Addendum

Chapter II

Recommendations and decisions

C. Report of the Scientific and Technical Subcommittee on its forty-first session

1. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its forty-first session (A/AC.105/823), which covered the results of its deliberations on the items assigned to it by the General Assembly in resolution 58/89.

2. At the 524th meeting of the Committee, on 7 June, the Chairman of the Scientific and Technical Subcommittee made a statement outlining the work of the Subcommittee at its forty-first session.

3. Under agenda item 8, the Committee heard a presentation by C. Kosmas of Greece entitled "HERMES: on-orbit servicing".

1. United Nations Programme on Space Applications

(a) Activities of the United Nations Programme on Space Applications

4. At the outset of the deliberations on this item, the Expert on Space Applications briefed the Committee on the overall strategy for the implementation of the United Nations Programme on Space Applications. The strategy would concentrate on several priority areas for developing countries and establish objectives that could be reached in the short and medium term. The Committee noted that, within each priority area, the main objectives would be (a) to introduce

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space technologies to educators and decision makers; (b) to stimulate discussions on regional needs and possibilities of using space technologies to find solutions to problems; and (c) to assist regions in launching pilot projects that utilize space technology applications and provide solutions to problems in order to meet regional needs.

5. The Committee noted that the priority areas of the Programme were (a) disaster management; (b) satellite communications for tele-education and telemedicine applications; (c) monitoring and protection of the environment including the prevention of infectious diseases; (d) management of natural resources; and (e) education and capacity-building, including research areas in basic space sciences. Other areas that the Programme would promote included developing capability in enabling technologies, such as the use of global navigation and positioning satellite systems, spin-offs of space technology, promoting the participation of youth in space activities, applications of small satellites and micro-satellites and promoting the participation of private industry in activities of the Programme.

6. The Committee took note of the activities of the Programme carried out in 2003 as set out in the report of the Scientific and Technical Subcommittee (A/AC.105/823, paras. 41-44). The Committee expressed its appreciation to the Office for Outer Space Affairs for the manner in which the activities of the Programme had been implemented using the limited funds available. The Committee also expressed its appreciation to the Governments and intergovernmental and non-governmental organizations that had sponsored the activities. The Committee noted with satisfaction that further progress was being made in the implementation of the activities of the Programme for 2004, as set out in the report of the Subcommittee (A/AC.105/823, paras. 45-46).

7. The Committee once again expressed its concern that the financial resources available to the United Nations Programme on Space Applications remained limited and appealed to the donor community to support the Programme through voluntary contributions. The Committee was of the view that the limited resources of the United Nations should be focused on the activities with the highest priority; it noted that the United Nations Programme on Space Applications was the priority activity of the Office for Outer Space Affairs.

(i) United Nations conferences, training courses and workshops

8. The Committee expressed its appreciation to China, the Islamic Republic of Iran, Sudan, Sweden, the United States and ESA for co-sponsoring and hosting United Nations activities held from January to June 2004 (A/AC.105/823, paras. 45 and 46 (a)-(d)).

9. The Committee endorsed the following workshops, training courses, symposiums and conferences planned for the remaining part of 2004, based on the programme of activities described in the report of the Expert on Space Applications (A/AC.105/815, annexes II and annex III):

(a) United Nations/Space and Upper Atmosphere Research Commission Regional Seminar on Monitoring and Protection of the Natural Environment: Educational Needs and Experience Gained from United Nations/Sweden Training

Courses on Remote Sensing Education for Educators, to be held in Islamabad in September 2004;

(b) United Nations/Austria/European Space Agency Symposium on Water for the World: Space Solutions for Water Management, to be held in Graz, Austria, from 13 to 16 September 2004;

(c) United Nations/Saudi Arabia Regional Workshop on the Use of Space Technology for Disaster Management for Western Asia, to be held in Riyadh in October 2004;

(d) United Nations/International Astronautical Federation Workshop on the Use of Space Technology for the Benefit of Developing Countries, to be held in Vancouver, Canada, in October 2004;

(e) United Nations International Workshop on the Use of Space Technology for Disaster Management, to be held in Munich, Germany, from 18 to 22 October 2004;

(f) United Nations/European Space Agency/Austria/Switzerland Workshop on Remote Sensing in the Service of Sustainable Development in Mountain Areas, to be held in Kathmandu from 15 to 19 November 2004;

(g) United Nations/Brazil Workshop on Space Law, to be held in Rio de Janeiro, Brazil, from 22 to 25 November 2004;

(h) United Nations International Meeting on the Use and Applications of Global Navigation Satellite Systems, to be held in Vienna in November/December 2004;

(i) Training courses to be organized at the regional centres for space science and technology education, affiliated to the United Nations.

10. The Committee endorsed the programme of workshops, training courses, symposiums and conferences planned to be held in 2005 for the benefit of developing countries, as follows:

(a) One workshop on basic space science;

(b) One workshop on space law, for the benefit of countries in Africa;

(c) One training course on satellite-aided search and rescue, to be held in Australia and for the benefit of the Pacific islands;

(d) Two workshops on the application of space technology to disaster management: the first to be held in Greece, focusing on the use of space applications in seismic monitoring and volcanic hazard assessment, and the second in preventing and managing natural disasters focusing on the use of space technology applications, for the benefit of Africa;

(e) One workshop to be held in Egypt, focusing on space technology applications for monitoring and assessing global change;

(f) Three workshops on the application of space technology to natural resources management and environmental monitoring, for the benefit of countries in Eastern Europe, Latin America and the Caribbean and mountainous areas in Asia;

(g) The third in a series of symposiums on the use of space technology in sustainable development, to be held in Graz, Austria, with the support of the Government of Austria and ESA;

(h) An expert meeting on the use and applications of global navigation satellite systems, to be held in Vienna, with the support of the United States;

(i) Activities in the areas of tele-health and tele-education, for the benefit of countries in Asia and the Pacific and countries in Latin America and the Caribbean;

(j) Training courses to be organized at the regional centres for space science and technology education, affiliated to the United Nations.

11. The Committee noted with appreciation that, since its forty-sixth session, additional resources for 2004 had been offered by various Member States and organizations.

12. The Committee noted with appreciation that the host countries of the regional centres for space science and technology education were providing significant financial and in-kind support to the centres.

(ii) Long-term fellowships for in-depth training

13. The Committee expressed its appreciation to ESA for having offered two fellowships for 2003 for research in remote sensing technology at the European Space Research Institute in Frascati, Italy.

14. The Committee noted with satisfaction that the Istituto Superiore Mario Boella and the Politecnico di Torino of Italy had offered five long-term fellowships on global navigation satellite systems and the applications of their signals for scientists and specialists from developing countries.

15. The Committee noted that it was important to increase the opportunities for in-depth education in all areas of space science, technology and applications projects through long-term fellowships and urged Member States to make such opportunities available at their relevant institutions.

(iii) Technical advisory services

16. The Committee noted with appreciation that the United Nations Programme on Space Applications had supported, collaborated with and provided assistance and technical advisory services to the Asia-Pacific Satellite Communications Council, Joanneum Research of Graz, Austria, the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization, the pro tempore secretariat of the Fourth Space Conference of the Americas, the Fundación Instituto de Ingeniería of the Ministry of Science and Technology of Venezuela, the Asociación Chilena del Espacio, the Ad Hoc Working Group on Earth Observation Education and Training of CEOS, the joint United Nations/ESA follow-up programme on the use of remote sensing technology in sustainable development and the subgroup on capacity-building of the Ad Hoc Group on Earth Observations.

(b) International Space Information Service

17. The Committee noted with satisfaction that the publications entitled *Seminars of the United Nations Programme on Space Applications*[1] and *Highlights in Space 2003*[2] had been issued.

18. The Committee noted with satisfaction that the Secretariat had continued to enhance the International Space Information Service and the web site of the Office for Outer Space Affairs (www.oosa.unvienna.org). The Committee also noted with satisfaction that the Secretariat was maintaining a web site on the coordination of outer space activities within the United Nations system (www.uncosa.unvienna.org).

(c) Regional and interregional cooperation

19. The Committee emphasized the importance of regional and international cooperation in making the benefits of space technology available to all countries by such cooperative activities as sharing payloads, disseminating information on spin-off benefits, ensuring the compatibility of space systems and providing access to launch capabilities at reasonable cost.

20. The Committee recalled that the General Assembly, in its resolution 50/27 of 6 December 1995, had endorsed the recommendation of the Committee that the regional centres on space science and technology education be established on the basis of affiliation with the United Nations as early as possible and that such affiliation would provide the centres with the necessary recognition and would strengthen the possibilities of attracting donors and of establishing academic relationships with national and international space-related institutions.

21. The Committee noted with satisfaction that the United Nations Programme on Space Applications continued to emphasize cooperation with Member States at the regional and international levels aimed at supporting the centres. The Committee noted that all the regional centres had entered into an affiliation agreement with the Office for Outer Space Affairs.

22. The Committee also noted that the highlights of the activities of the regional centres supported under the Programme in 2003 and planned activities for 2004 and 2005 were included in the report of the Expert on Space Applications (A/AC.105/815, annex III).

23. The Committee noted with satisfaction that the Office for Outer Space Affairs was providing support to the Government of Jordan in its preparations for the establishment of the regional centre for space science and technology education for Western Asia.

24. The Committee noted with satisfaction the initiative of the Chilean Space Agency, in cooperation with the Office for Outer Space Affairs, in holding in Santiago de Chile on 1 and 2 April 2004, in the context of the International Air and Space Fair, an International Conference on Space and Water: Towards Sustainable Development and Human Security.

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[1] United Nations Publication, Sales No. E.04.I.6.

[2] United Nations Publication, Sales No. E.04.I.5.

(d) International Satellite System for Search and Rescue

25. The Committee recalled that, at its forty-fourth session, it had agreed that a report on the activities of the International Satellite System for Search and Rescue (COSPAS-SARSAT) should be considered annually by the Committee as part of its consideration of the United Nations Programme on Space Applications and that member States should report on their activities regarding COSPAS-SARSAT.[3]

26. The Committee noted with satisfaction that COSPAS-SARSAT, a cooperative venture initiated in the late 1970s involving Canada, France, the Russian Federation and the United States, was using space technology to assist aviators and mariners in distress around the globe. Since 1982, COSPAS-SARSAT had introduced analogue and digital emergency beacons worldwide. COSPAS-SARSAT had expanded its space segment to include ad hoc payloads on geostationary and low-Earth orbit satellites that currently provided alert signals.

27. The Committee noted with satisfaction that COSPAS-SARSAT currently had 37 member States and that its members were from every continent. Those States had helped to deploy a robust ground network and alert data distribution system. COSPAS-SARSAT had assisted in the rescue of over 17,000 persons in almost 5,000 distress incidents since 1982.

2. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment

28. The Committee noted that, in accordance with General Assembly resolution 58/89, the Scientific and Technical Subcommittee had continued its consideration of matters relating to remote sensing of the Earth by satellite. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/823, paras. 72-83).

29. The Committee emphasized the importance of remote sensing technology for sustainable development. In that connection, it also emphasized the importance of providing non-discriminatory access to state-of-the-art remote sensing data and to derived information at reasonable cost and in a timely manner.

30. The Committee further emphasized the importance of building capacity in the adoption and use of remote sensing technology, in particular to meet the needs of developing countries.

31. The Committee also highlighted the importance of international cooperation between member States in the use of remote sensing satellites, particularly by sharing experiences and technologies.

3. Space debris

32. The Committee noted that, in accordance with General Assembly resolution 58/89, the Scientific and Technical Subcommittee had continued its consideration of the item on space debris in accordance with the work plan adopted at its thirty-eighth session (A/AC.105/761, para. 130). The Committee took note of

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[3] *Official Records of the General Assembly, Fifty-sixth session, Supplement No. 20* and corrigendum (A/56/20 and Corr.1), para. 220.

the discussion of the Subcommittee on space debris, as reflected in the report of the Subcommittee (A/AC.105/823, paras. 84-107).

33. The Committee agreed with the Scientific and Technical Subcommittee that consideration of space debris was important, that international cooperation was needed to develop more appropriate and affordable strategies to minimize the potential impact of space debris on future space missions and that member States should pay more attention to the problem of collisions of space objects, including those with nuclear power sources on board, with space debris and to other aspects of space debris (A/AC.105/823, para. 89), pursuant to General Assembly resolution 58/89.

34. The Committee noted with satisfaction that the Subcommittee at its forty-first session, in accordance with General Assembly resolution 58/89, had established a working group to consider comments received from member States of the Committee on the proposals on debris mitigation presented by the Inter-Agency Space Debris Coordination Committee (IADC) to the Subcommittee at its fortieth session (A/AC.105/823, para. 92). The Committee also noted that the Subcommittee had endorsed the recommendations of the Working Group on Space Debris as contained in its report (A/AC.105/823, para. 93 and annex III).

35. The Committee expressed its appreciation for the work of IADC regarding the IADC space debris mitigation guidelines and expressed its hope that IADC would further develop that document, taking into account comments submitted by member States.

36. The view was expressed that the fastest way to limit the growth of orbital debris would be for space-faring countries to implement the measures specified in the IADC space debris mitigation guidelines.

37. The view was expressed that the Subcommittee should proceed to endorse the IADC proposals on space debris mitigation, first as voluntary measures and later as a basis for binding legal provisions.

38. The view was expressed that the IADC space debris mitigation guidelines should be implemented by States on a voluntary basis, since not all States had the technical and financial capabilities required to follow the guidelines.

39. The view was expressed that the subject of space debris was extremely important for the preservation of the outer space environment, so that all developing countries would be able to explore outer space with no constraints.

40. The view was expressed that the burden of following IADC space debris mitigation guidelines was not the same for developed countries as it was for developing countries and therefore the former should help the latter in following the guidelines.

41. The view was expressed that the technological and financial means for the mitigation of space debris should be provided to developing countries, in order to enable them to step up their efforts to reduce space debris within their own space capabilities.

42. At the 527th meeting, on 8 June, the Chairman of the Working Group on Space Debris, Claudio Portelli (Italy), informed the Committee about the activities of the Working Group with regard to the implementation of its work plan.

43. The Committee noted with satisfaction that IADC would invite interested member States of the Committee to participate in an IADC meeting to be held in Vancouver, Canada, in October 2004. The Committee noted that the meeting would provide an opportunity to make progress towards achieving the objectives set by the Working Group on Space Debris.

4. Use of nuclear power sources in outer space

44. The Committee noted that, in accordance with General Assembly resolution 58/89, the Scientific and Technical Subcommittee had continued its consideration of the item relating to the use of nuclear power sources in outer space. The Committee took note of the discussion of the Subcommittee on the use of nuclear power sources in outer space, as reflected in the report of the Subcommittee (A/AC.105/823, paras. 108-118).

45. The Committee noted with satisfaction that the Subcommittee had reconvened its Working Group on the Use of Nuclear Power Sources in Outer Space. The Committee noted with satisfaction that the Working Group had also made progress in developing potential implementation options for establishing an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable space nuclear power source applications.

46. Some delegations expressed the view that nuclear power sources should be used in outer space only in deep space missions or in other cases where their use was unavoidable.

47. The view was expressed that careful study and exchange of information would be needed if nuclear power sources were used close to the Earth.

48. The view was expressed that, if nuclear power sources were to be used in outer space, they ought to be made safe through both appropriate design and adequate operational measures to protect the population of and the environment on Earth.

49. At the 527th meeting, on 8 June, the Chairman of the Working Group on the Use of Nuclear Power Sources in Outer Space, Sam Harbison (United Kingdom), reported on the status of the informal consultations among members of the Working Group that had been held during the forty-seventh session of the Committee.

50. The Committee noted with satisfaction that, as a result of those informal consultations, the document entitled “Proposed outline of objectives, scope and attributes for an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space” (A/AC.105/L.253) and the document entitled “Preliminary draft of flow charts for potential implementation options for establishing an international technically based framework of goals and recommendations for the safety of planned and currently foreseeable nuclear power source applications in outer space” (A/AC.105/L.254) would be updated and re-submitted to the Scientific and Technical Subcommittee at its forty-second session, in 2005.

5. Space-system-based telemedicine

51. The Committee noted that, in accordance with General Assembly resolution 58/89, the Scientific and Technical Subcommittee had considered an item

on space-system-based telemedicine under the three-year work plan adopted by the Subcommittee at its fortieth session. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/823, paras. 119-127).

52. The Committee noted with satisfaction the progress made in addressing the multi-year work plan on the item on space-system-based telemedicine. The Committee also noted that statements and presentations made under the agenda item had demonstrated the remarkable progress and potential in space-system-based telemedicine and the strong interest of the international community in sharing and learning from the work currently being done in that area.

53. The Committee noted that the rapid delivery of public health care, including in rural areas, could be provided for by means of space-system-based telemedicine and that a significant number of problems facing developing countries in the health sector could be solved by integrating telemedicine and/or tele-health services into existing health-care practice. The Committee also noted that applications of space-system-based telemedicine could help to enhance surveillance and control of many diseases in Africa, such as dracunculiasis (Guinea worm disease), dengue fever, and Rift Valley fever, cholera and meningitis.

6. Examination of the physical nature and technical attributes of the geostationary orbit and of its utilization and applications, including, inter alia, in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries

54. The Committee noted that, in accordance with General Assembly resolution 58/89, the Scientific and Technical Subcommittee had continued its consideration of the item on the geostationary orbit and space communications as a single issue/item for discussion. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/823, paras. 128-133).

55. The view was expressed that there was a lack of progress in the Subcommittee on the matter of the geostationary orbit. That delegation suggested that the member States concerned provide further refinements to the working paper submitted to the Subcommittee by the Czech Republic (A/AC.105/C.1/L.216) or consider formulating a multi-year work plan so that all relevant issues relating to that agenda item could be considered in depth in the Subcommittee.

7. Implementation of an integrated, space-based global natural disaster management system

56. The Committee noted that, in accordance with General Assembly resolution 58/89, the Scientific and Technical Subcommittee had considered an item on implementation of an integrated, space-based global natural disaster management system as a single issue/item for discussion. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/823, paras. 134-150).

57. The Committee noted with satisfaction the progress made by the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of

Natural or Technological Disasters (International Charter on Space and Major Disasters). In 2003, the National Commission on Space Activities (CONAE) of Argentina had joined the Charter and the Japan Aerospace Exploration Agency (JAXA) had decided to apply to join it. That would increase to seven the number of space agencies that had made their space assets available to civil protection authorities responding to a major disaster.

58. The Committee noted that the Office for Outer Space Affairs had become a cooperating body to the International Charter on Space and Major Disasters, thus making it possible for any United Nations entity to request imagery from the Charter to facilitate relief efforts immediately following a natural or technological disaster. Since the Office had set up a hotline, the Charter had been used nine times: in response to floods in the Dominican Republic, Namibia, Nepal and Haiti, landslides in the Philippines, earthquakes in Afghanistan, Indonesia and Morocco and following a train crash in the Democratic People's Republic of Korea.

59. The Committee recognized the important contributions that the Action Team on Disaster Management had made towards defining concrete steps that would contribute to the implementation of an integrated, space-based global natural disaster management system and agreed that further study should be carried out by the Action Team on the implementation of the recommendation to establish, within the framework of the United Nations, a disaster management international space coordination organization.

60. Some delegations expressed the view that the establishment of such an international organization for the space-based coordination of disaster management should be supported and that the organization should function within the United Nations system.

61. The Committee noted with satisfaction that, at its forty-first session, the Scientific and Technical Subcommittee had adopted a multi-year work plan to consider an item on space-system-based disaster management support, starting with its forty-second session, in 2005.

62. The Committee noted the work being carried out by CEOS, specifically with regard to module 3 of the CEOS programme to follow up on the World Summit on Sustainable Development, which would address disaster management and the environmental and humanitarian impact of conflict. The module, to be initiated in 2004, would focus on working towards increasing awareness of the applications for and utilization of Earth observation data in developing countries and would assist in the establishment of infrastructure and communications related to disaster management and the environmental and humanitarian impact of conflict.

63. The Committee noted that the Earth Observation Summit, held in Washington, D.C., on 31 July 2003, and the activities of the ad hoc Group on Earth Observations, established as a result of the Summit, were intended to facilitate access to space and in situ data and that such access would support disaster management efforts, especially in developing countries.

64. The Committee noted the opportunity provided by the World Conference on Disaster Reduction, to be held from 18 to 22 January 2005 in Kobe, Japan, which would focus on a review of progress over the past decade, based on the Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention,

Preparedness and Mitigation, containing the Principles, the Strategy and the Plan of Action (A/CONF.172/9, chap. I, resolution 1, annex I), and the definition of a set of specific goals, activities and policy measures for implementation in the period 2005-2015. The Committee also noted that space technology could play a central role in disaster reduction and that both the Committee and the Scientific and Technical Subcommittee could contribute to the World Conference and its follow-up, ensuring that space technologies would be an integral part of the solutions put forward in the Conference's plan of implementation.

65. The Committee noted that the African Resource Management initiative was a priority project in the New Partnership for Africa's Development (NEPAD) science and technology programmes. When launched, the African Resource Management satellites would provide valuable, real-time and reliable data for the mapping and management of the resources of Africa, as well as for environment management and for the early warning, prevention and management of disasters.

66. In accordance with General Assembly resolution 58/89, a workshop was held on the theme "Satellites for disaster communications: saving lives from natural disasters" on 7 June 2004. The workshop was chaired by Hans Zimmermann of the Office for the Coordination of Humanitarian Affairs of the Secretariat.

67. The following presentations were made at the workshop: "Inmarsat: global mobile satellite communications", by T. Bradley of Inmarsat; "The role of mobile satellite communications", by G. Larionov of Thuraya Satellite Telecommunications Company; "How satellite-based communications can be used during natural disasters", by J. Schroeder of Iridium Satellite LLC; "Disaster management communications plans for India: the role of the INSAT system", by M.Y.S. Prasad of the Indian Space Research Organisation on behalf of Antrix Corporation Limited; and "Satellite solutions for crisis situations", by G. Donelan of SES-Astra. The presentations were followed by a panel discussion on the theme "Working together to save lives: how to enhance Government-industry cooperation".

68. The Committee noted that the workshop participants had emphasized that it was important for Governments to have advance disaster response preparedness plans in their countries and to be prepared to use their own resources during international crises, as well as to create a better regulatory environment to facilitate the use of telecommunications, including via satellite, in response to disasters. The Committee also noted that the workshop participants had invited the United Nations International Workshop on the Use of Space Technology for Disaster Management, to be held in Munich, Germany, from 18 to 22 October 2004, to take note of the outcome of the workshop on satellites for disaster communications.

8. Solar-terrestrial physics

69. The Committee noted that, in accordance with General Assembly resolution 58/89, the Scientific and Technical Subcommittee had considered an agenda item on solar-terrestrial physics as a single issue/item for discussion. The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/823, paras. 151-158).

70. The Committee noted that the effects of solar activities and space weather phenomena on the daily lives of humans, on the Earth's environment and on space

systems were becoming more apparent and that there was a need to collaborate to develop a better understanding of those effects.

71. The Committee noted that the interaction of severe magnetic storms caused by coronal mass ejections from the Sun with satellites in geostationary orbit would require further study before space weather could be predicted accurately.

72. The Committee noted with satisfaction that the Scientific and Technical Subcommittee, at its forty-second session, in 2005, would continue to consider solar-terrestrial physics and to examine how the Subcommittee might support and enhance the coordination and planning of worldwide activities marking International Geophysical and Heliophysical Year 2007.

9. Draft provisional agenda for the forty-second session of the Scientific and Technical Subcommittee

73. The Committee noted that, in accordance with General Assembly resolution 58/89, the Scientific and Technical Subcommittee had considered proposals for a draft provisional agenda for its forty-second session. The Subcommittee had endorsed the recommendations of its Working Group of the Whole concerning the draft provisional agenda for the forty-second session of the Subcommittee (A/AC.105/823, paras. 159-161 and annex II).

74. The Committee endorsed the recommendation to continue the practice of alternating each year the organization of the symposium by the Committee on Space Research (COSPAR) and IAF and the symposium to strengthen the partnership with industry. The Committee agreed that in 2005, the symposium organized by COSPAR and IAF would be held and the industry symposium would be suspended (A/AC.105/823, annex II, para. 21).

75. The Committee endorsed the recommendation that the COSPAR and IAF symposium, to be held during the first week of the forty-second session of the Subcommittee, in 2005, should address high-resolution and hyperspectral satellite data integration for precision farming, environmental monitoring and possible new applications (A/AC.105/823, annex II, para. 22).

76. The Committee endorsed the recommendation that the Subcommittee, in 2005, should consider an agenda item on space-system-based disaster management support in accordance with the multi-year work plan agreed upon by the Subcommittee (A/AC.105/823, annex II, para. 15).

77. The Committee endorsed the recommendation that the Subcommittee, in 2005, should consider an agenda item on near-Earth objects in accordance with the multi-year work plan agreed upon by the Subcommittee (A/AC.105/823, annex II, para. 18).

78. The Committee endorsed the recommendation to revise the plan for 2005 contained in the work plan for space debris, agreed upon by the Subcommittee at its thirty-eighth session, in 2001, to allow the Working Group on Space Debris to consider, as necessary, the IADC proposals on space debris mitigation and any related comments that might be received.

79. The Committee endorsed the recommendation that the Subcommittee at its forty-second session, in 2005, consider an agenda item entitled “Support to proclaim

the year 2007 International Geophysical and Heliophysical Year" be included in the agenda for the forty-second session of the Scientific and Technical Subcommittee, in 2005 (A/AC.105/823, annex II, para. 14).

80. The Committee noted that the special presentations made to the Scientific and Technical Subcommittee on a wide variety of topics increased the technical content of the deliberations and provided timely information on new developments in space activities.

81. On the basis of the deliberations of the Scientific and Technical Subcommittee at its forty-first session, the Committee agreed on the following draft provisional agenda for the forty-second session of the Subcommittee:

1. General exchange of views and introduction to reports submitted on national activities.

2. United Nations Programme on Space Applications.

3. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).

4. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.

5. Items to be considered under work plans:

   (a) Space debris;

   (Member States begin annual reporting on a voluntary basis of national activities to implement the proposals on space debris mitigation)[4]

   (Consideration by the Working Group on Space Debris, as necessary, of the proposals on space debris mitigation and such further related comments as may be received)

   (b) Use of nuclear power sources in outer space;

   (Work for 2005 as reflected in the multi-year work plan contained in document A/AC.105/804, annex III)

   (c) Space-system-based telemedicine;

   (Work for 2005 as reflected in the multi-year work plan contained in document A/58/20, para. 138)

   (d) Near-Earth objects;

   (Work for 2005 as reflected in the multi-year work plan contained in document A/AC.105/823, annex II)

   (e) Space-system-based disaster management support.

   (Work for 2005 as reflected in the multi-year work plan contained in document A/AC.105/823, annex II).

[4] See A/AC.105/761, para. 130.

6. Single issues/items for discussion:

   (a) Examination of the physical nature and technical attributes of the geostationary orbit and its utilization and applications, including, inter alia, in the field of space communications, as well as other questions relating to developments in space communications, taking particular account of the needs and interests of developing countries;

   (b) Support to proclaim the year 2007 International Geophysical and Heliophysical Year.

7. Draft provisional agenda for the forty-third session of the Scientific and Technical Subcommittee, including identification of subjects to be dealt with as single issues/items for discussion or under multi-year work plans.

8. Report to the Committee on the Peaceful Uses of Outer Space.

D. Report of the Legal Subcommittee on its forty-third session

82. The Committee took note with appreciation of the report of the Legal Subcommittee on its forty-third session (A/AC.105/826), which contained the results of its deliberations on the items assigned to it by the General Assembly in resolution 58/89.

83. At the 524th meeting of the Committee, the Chairman of the Legal Subcommittee made a statement on the work of the Subcommittee at its forty-third session.

1. Status and application of the five United Nations treaties on outer space

84. The Committee noted that, in accordance with General Assembly resolution 58/89, the Legal Subcommittee had considered the status and application of the five United Nations treaties on outer space as a regular item and had reconvened its working group on the item under the chairmanship of Vassilios Cassapoglou (Greece).

85. The Committee noted that the terms of reference of the Working Group on the Status and Application of the Five United Nations Treaties on Outer Space included the status of the treaties, review of their implementation and obstacles to their universal acceptance, the promotion of space law, especially through the United Nations Programme on Space Applications, review of the application and implementation of the concept of the "launching State", as reflected in the conclusions of the Subcommittee's consideration of the three-year work plan on "Review of the concept of the 'launching State'", as well as any new, similar issues that might be raised in discussions in the Working Group, provided that those issues fell within the existing mandate of the Working Group (A/AC.105/826, para. 27).

86. The Committee noted with satisfaction that the Working Group had agreed on the text of a draft resolution on the application of the concept of the "launching State", for consideration by the General Assembly. The Committee approved the draft resolution on the application of the concept of the "launching State", as contained in annex […] to the present report.

87. The Committee agreed that the Secretary-General should be requested to send to the ministers for foreign affairs of States that had not yet become parties to the United Nations treaties on outer space the model letter and informational material agreed upon by the Working Group (A/AC.105/826, annex I, para. 6 and appendix I), and endorsed by the Legal Subcommittee encouraging their States to participate in those treaties. The Committee also agreed that the Secretary-General should send a similar letter to intergovernmental organizations that had not yet declared their acceptance of the rights and obligations under those treaties.

88. The Committee endorsed the recommendation of the Legal Subcommittee to extend the mandate of the Working Group under this item for one additional year, to 2005, and agreed that the Subcommittee at its forty-fourth session should review the need to extend the mandate beyond 2005 (A/AC.105/826, para. 35).

89. The Committee welcomed the information provided by some delegations on the current status of the five United Nations treaties on outer space and on the further action that those delegations intended to take in order to accede to or ratify those treaties. The Committee also welcomed the reports from member States indicating their progress in developing national space laws.

90. The Committee agreed that the treaties on outer space had established a framework that had encouraged the exploration of outer space and had benefited both space-faring and non-space-faring States.

91. The view was expressed that, due to new developments in space activities, such as the commercialization of space and the increased risk of harming the space environment, there was a need for the negotiation of a new, comprehensive convention on outer space law to further strengthen the international legal regime covering outer space activities. That delegation was of the view that a single, comprehensive convention could cover all aspects of outer space activities.

92. The view was expressed that to entertain the possibility of negotiating a new, comprehensive space law instrument could only serve to undermine the existing framework of international space law.

93. The Committee noted with appreciation that the workshop on space law had been hosted by the Republic of Korea and held in Daejeon, Republic of Korea, from 3 to 6 November 2003. The Committee welcomed the announcement that the next workshop on space law would be hosted by Brazil from 22 to 25 November 2004.

2. Information on the activities of international organizations relating to space law

94. The Committee noted that, in accordance with General Assembly resolution 58/89, the Legal Subcommittee had considered information on the activities of international organizations relating to space law as a regular item.

95. The Committee noted with satisfaction that the Legal Subcommittee had been provided with reports from various international organizations on their activities relating to space law and endorsed the agreement by the Legal Subcommittee that the Secretariat should again invite international organizations to provide reports to the Subcommittee at its forty-fourth session, in 2005.

96. The Committee noted that the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) of the United Nations Educational,

Scientific and Cultural Organization (UNESCO) was considering the potential for international action in the area of space ethics, including bilateral consultations to study the feasibility of a declaration on the principles of ethics relating to outer space and of action that could be taken in relation to education, raising awareness of ethics, international cooperation and data management. In that context, UNESCO had taken into consideration the recommendations of the Group of Experts on the Ethics of Outer Space established by the Committee at its forty-fourth session, which had been transmitted to UNESCO in 2003.

97. The Committee also noted that COMEST, together with ESA and ECSL, was planning to hold a conference on the legal and ethical framework for astronaut activities in the era of the International Space Station in Paris in October 2004.

3. Matters relating to: (a) the definition and delimitation of outer space; and (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

98. The Committee noted that, in accordance with General Assembly resolution 58/89, the Legal Subcommittee had continued to consider as a regular item matters relating to: (a) the definition and delimitation of outer space; and (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 (ITU).

99. The Committee noted that the working group on this item had been re-established under the chairmanship of Déborah Salgado Campaña (Ecuador) to consider only matters relating to the definition and delimitation of outer space, in accordance with the agreement reached by the Legal Subcommittee at its thirty-ninth session and endorsed by the Committee at its forty-third session.

100. The Committee noted that the Legal Subcommittee, at its forty-fourth session, would continue examining the document entitled “Analytical summary of the replies to the questionnaire on possible legal issues with regard to aerospace objects” (A/AC.105/C.2/L.249 and Corr.1) and that, in order to enhance its contents, Member States that had not yet replied to the questionnaire on aerospace objects should be invited to do so. The Committee further noted that the working group on this item would be reconvened during the forty-fourth session of the Subcommittee.

101. Some delegations reiterated the view that the geostationary orbit was a limited natural resource with sui generis characteristics that risked saturation and that its utilization should be based on the principle of rational and equitable access for all countries, taking into account the special needs of developing countries, the geographical position of certain countries and the process of ITU.

4. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space

102. The Committee noted that, in accordance with General Assembly resolution 8/89, the Legal Subcommittee had continued its consideration of the review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space as a single issue/item for discussion.

103. The Committee noted that an exchange of views had taken place in the Legal Subcommittee on the review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space, as reflected in the report of the Subcommittee (A/AC.105/826, paras. 60-65), in which reference was made to the work currently being undertaken by the Scientific and Technical Subcommittee under the item entitled "Use of nuclear power sources in outer space".

5. Examination of the preliminary draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment (opened for signature at Cape Town on 16 November 2001)

104. The Committee noted that, in accordance with General Assembly resolution 58/89, the Legal Subcommittee had considered a single issue/item for discussion entitled "Examination of the preliminary draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment (opened for signature at Cape Town on 16 November 2001)".

105. The Committee noted that, in accordance with resolution 58/89, the Legal Subcommittee had considered two sub-items under that agenda item:

"(a) Considerations relating to the possibility of the United Nations serving as supervisory authority under the preliminary draft protocol;

"(b) Considerations relating to the relationship between the terms of the preliminary draft protocol and the rights and obligations of States under the legal regime applicable to outer space."

106. The Committee noted that, in accordance with resolution 58/89, the Legal Subcommittee had established a working group on that item. The chairman of the working group was Vladimír Kopal (Czech Republic).

107. The Committee endorsed the recommendation of the Legal Subcommittee to establish an open-ended ad hoc working group, made up of at least two representatives from each of the regional groups, to continue between the forty-third and forty-fourth sessions of the Subcommittee, by electronic means, the consideration of the question of the appropriateness of the United Nations acting as supervisory authority. The working group would prepare a report, including the text of a draft resolution, to be submitted to the Subcommittee for consideration at its forty-fourth session, in 2005. The Committee endorsed the recommendation of the Subcommittee to appoint the Netherlands as coordinator of the open-ended ad hoc working group.

108. The Committee noted that the second session of the International Institute for the Unification of Private Law (Unidroit) committee of governmental experts for the consideration of the preliminary draft protocol would be held in Rome from 25 to 29 October 2004 and that member States of the Committee would be invited to attend the session.

109. The Committee invited Unidroit to consider, taking into account the resources that would be needed, the possibility of holding the sessions of the committee of governmental experts in Vienna.

110. The Committee noted that a colloquium on the preliminary draft protocol on space assets had been held in Kuala Lumpur from 22 to 23 April 2004.

111. Some delegations expressed the view that the Convention on International Interests in Mobile Equipment and the future protocol on matters specific to space assets would bring benefits to countries at different levels of economic and technological development and enable in particular less developed countries to take an active part in space activities by reducing the financial risk and burden arising from those activities.

112. The view was expressed that the level of interest in the draft space assets protocol was indicative of the importance of private activities in the future development of outer space activities and the need to facilitate the establishment of adequate financing mechanisms for such activities.

113. Some delegations expressed the view that the United Nations was, in principle, the most appropriate organization to exercise the functions of supervisory authority and that, by exercising those functions, the United Nations would enhance its role in promoting international cooperation for the benefit of all and encourage the progressive development of international law and its codification.

114. Some delegations expressed the view that, if the United Nations assumed the functions of supervisory authority, it would be necessary to ensure that the United Nations did not bear any cost associated with exercising those functions and would be exempted from liability for damage.

115. Some delegations expressed the view that it was important to examine carefully the issues regarding the possibility of the United Nations serving as supervisory authority. Those delegations were of the view that a number of both practical and fundamental issues remained to be resolved before the Subcommittee could decide on the appropriateness of the United Nations serving as supervisory authority under the future space assets protocol.

116. The view was expressed that it was necessary to explore the possibility of an international body other than the United Nations serving as supervisory authority under the future protocol, as the exercise of that function was outside the mandate of the United Nations enshrined in its Charter. That delegation was of the view that it would be more effective and efficient for Unidroit to assume the functions of supervisory authority, since the Convention and the draft protocol had been developed under the aegis of Unidroit.

117. The view was expressed that it was questionable whether, for both legal and practical reasons, it would be appropriate for the United Nations to serve as supervisory authority under the future space assets protocol.

118. Some delegations expressed the view that the Committee should continue to study the practical experiences of the International Civil Aviation Organization in its role as Supervisory Authority under the Protocol to the Convention on International Interests in Mobile Equipment on Matters Specific to Aircraft Equipment.

119. The view was expressed that the functions of the supervisory authority should be entrusted to an existing international organization.

120. The view was expressed that, after consideration of the legal, administrative and cost aspects, it would be necessary for the General Assembly to provide policy direction with regard to the mandate of the Committee and to its role in the implementation of the future protocol on matters specific to space assets.

121. Some delegations expressed the view that the Convention and the future protocol should neither undermine nor compromise existing principles of international space law and that, in case of conflict, the norms of public international law contained in the United Nations treaties on outer space should prevail.

122. Some delegations expressed the view that the Convention and draft space assets protocol did not affect the rights and obligations of States under the legal regime applicable to outer space or compromise generally recognized principles of space law, as provisions had been included in both the preamble and the operative part of the draft space assets protocol (article XXI bis), which would guarantee that the United Nations treaties on outer space would be respected by the States parties to the future space assets protocol.

123. Some delegations expressed the view that the future protocol should clearly specify the primacy of the United Nations treaties on outer space and that nothing in the future protocol should prejudice States' rights and obligations under the outer space treaties, in particular, a State's international responsibility for space activities conducted by a non-government entity of that State.

124. Some delegations expressed the view that it was vital to emphasize in the future protocol the public nature of the services that satellites carried, particularly in developing countries, and that safeguards should be put in place to protect the vital national interests of those States in case of default.

6. Practice of States and international organizations in registering space objects

125. The Committee noted that, in accordance with General Assembly resolution 58/89, the Legal Subcommittee had considered the practice of States and international organizations in registering space objects in accordance with the work plan adopted by the Committee at its forty-sixth session.[5] The Committee took note of the discussion of the Subcommittee under that agenda item, as reflected in the report of the Subcommittee (A/AC.105/826, paras. 109-120).

126. The view was expressed that consideration of this agenda item provided an opportunity for the Legal Subcommittee to make an important contribution to facilitating the exchange of information on practices and laws of States relating to the implementation of the core space law treaties.

127. The view was expressed that the essential aspect of the work under this agenda item was to identify the practice of States under the Convention on Registration of Objects Launched into Outer Space (General Assembly resolution 3235 (XXIX), annex) and to draft recommendations aimed at enhancing adherence to that Convention.

7. Draft provisional agenda for the forty-fourth session of the Legal Subcommittee

128. The Committee noted that, in accordance with General Assembly resolution 58/89, the Legal Subcommittee had considered an item entitled

[5] *Official Records of the General Assembly, Fifty-eighth Session, Supplement No. 20* (A/58/20), para. 199.

"Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its forty-fourth session".

129. The Committee noted that an exchange of views had taken place in the Legal Subcommittee on numerous proposals by member States for new agenda items and that agreement had been reached on a proposal to the Committee for the agenda of the forty-fourth session of the Subcommittee, in 2005, as reflected in its report (A/AC.105/826, paras. 121-134).

130. The Committee noted that the Legal Subcommittee had considered a proposal on space debris, submitted by France and supported by member and cooperating States of ESA, for inclusion on the agenda of the Subcommittee at its forty-fourth session (A/AC.105/826, para. 122 (e)).

131. Some delegations expressed the view that, in addition to the discussions on the technical aspects of space debris in the Scientific and Technical Subcommittee, the Legal Subcommittee should also consider the legal aspects of space debris.

132. Some delegations expressed the view that, although some member States needed more time to adopt the space debris mitigation guidelines presented to the Scientific and Technical Subcommittee by IADC, the Legal Subcommittee should include on its agenda a new item on space debris, as proposed by France and supported by member and cooperating States of ESA.

133. The Committee noted that the Subcommittee had considered a proposal for a single issue/item for discussion entitled "Analysis of current remote sensing practices within the framework of the Principles Relating to Remote Sensing of the Earth from Outer Space", submitted by Brazil for inclusion on the agenda of the Subcommittee at its forty-fourth session (A/AC.105/826, para. 128).

134. Some delegations expressed the view that the Subcommittee at its forty-fourth session should again consider the proposal submitted by Brazil.

135. On the basis of the deliberations of the Legal Subcommittee at its forty-third session, the Committee agreed on the following draft provisional agenda for the forty-fourth session of the Legal Subcommittee, in 2005:

Regular items

1. Opening of the session and adoption of the agenda.
2. Statement by the Chairman.
3. General exchange of views.
4. Status and application of the five United Nations treaties on outer space.
5. Information on the activities of international organizations relating to space law.
6. 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.

Single issues/items for discussion

7. Review and possible revision of the Principles Relevant to the Use of Nuclear Power Sources in Outer Space.

8. Examination of the preliminary draft protocol on matters specific to space assets to the Convention on International Interests in Mobile Equipment (opened for signature in Cape Town on 16 November 2001):

(a) Considerations relating to the possibility of the United Nations serving as supervisory authority under the future protocol;

(b) Considerations relating to the relationship between the terms of the future protocol and the rights and obligations of States under the legal regime applicable to outer space.

Items considered under work plans

9. Practice of States and international organizations in registering space objects.

(Examination by a working group of the reports submitted by member States and international organizations in 2004.)

New item

10. Proposals to the Committee on the Peaceful Uses of Outer Space for new items to be considered by the Legal Subcommittee at its forty-fifth session.

Annex […]

Draft resolution on the application of the concept of the "launching State", for consideration by the General Assembly

Application of the concept of the "launching State"

The General Assembly,

Recalling the Convention on International Liability for Damage Caused by Space Objects[a] and the Convention on Registration of Objects Launched into Outer Space,[b]

Bearing in mind that the term "launching State" as used in the Liability Convention and the Registration Convention is important in space law, that a launching State shall register a space object in accordance with the Registration Convention and that the Liability Convention identifies those States which may be liable for damage caused by a space object and which would have to pay compensation in such a case,

Taking note of the report of the Committee on the Peaceful Uses of Outer Space on its forty-second session[c] and the report of the Legal Subcommittee on its forty-first session, in particular the conclusions of the Working Group on the agenda item entitled "Review of the concept of the 'launching State'", annexed to the report of the Legal Subcommittee,[d]

Noting that nothing in the conclusions of the Working Group or in the present resolution constitutes an authoritative interpretation of or a proposed amendment to the Registration Convention or the Liability Convention,

Noting also that changes in space activities since the Liability Convention and the Registration Convention entered into force include the continuous development of new technologies, an increase in the number of States carrying out space activities, an increase in international cooperation in the peaceful uses of outer space and an increase in space activities carried out by non-governmental entities, including activities carried out jointly by government agencies and non-governmental entities, as well as partnerships formed by non-governmental entities from one or more countries,

Desirous of facilitating adherence to and the application of the provisions of the United Nations treaties on outer space, in particular the Liability Convention and the Registration Convention,

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[a] General Assembly resolution 2777 (XXVI), annex.
[b] General Assembly resolution 3235 (XXIX), annex.
[c] *Official Records of the General Assembly, Fifty-fourth Session, Supplement No. 20* and corrigendum (A/54/20 and Corr.1).
[d] A/AC.105/787, annex IV, appendix.

1. *Recommends* that States conducting space activities, in fulfilling their international obligations under the United Nations treaties on outer space, in particular the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,[e] the Convention on International Liability for Damage Caused by Space Objects and the Convention on Registration of Objects Launched into Outer Space, as well as other relevant international agreements, consider enacting and implementing national laws authorizing and providing for continuing supervision of the activities in outer space of non-governmental entities under their jurisdiction;

2. *Also recommends* that States consider the conclusion of agreements in accordance with the Liability Convention with respect to joint launches or cooperation programmes;

3. *Further recommends* that the Committee on the Peaceful Uses of Outer Space should invite Member States to submit information on a voluntary basis on their current practices regarding on-orbit transfer of ownership of space objects;

4. *Recommends* that States consider, on the basis of that information, the possibility of harmonizing such practices as appropriate with a view to increasing the consistency of national space legislation with international law;

5. *Requests* the Committee on the Peaceful Uses of Outer Space, in making full use of the functions and resources of the Secretariat, to continue to provide States, at their request, with relevant information and assistance in developing national space laws based on the relevant treaties.

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[e] General Assembly resolution 2222 (XXI), annex.