



# General Assembly

Distr.: Limited  
18 June 2003

Original: English

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**Committee on the Peaceful  
Uses of Outer Space**  
Forty-sixth session  
Vienna, 11-20 June 2003

## **Draft report**

### **Addendum**

## **Chapter II Recommendations and decisions**

### **C. Report of the Scientific and Technical Subcommittee on its fortieth session**

1. The Committee took note with appreciation of the report of the Scientific and Technical Subcommittee on its fortieth session (A/AC.105/804), which covered the results of its deliberations on the items assigned to it by the General Assembly in resolution 57/116.

2. At the 507th meeting of the Committee, the Chairman of the Scientific and Technical Subcommittee made a statement outlining the work of the Subcommittee at its fortieth session.

#### **1. United Nations Programme on Space Applications**

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

3. At the outset of the deliberations on this item, a representative of the Office for Outer Space Affairs briefed the Committee on the overall strategy for the implementation of the United Nations Programme on Space Applications. The strategy would concentrate on a few 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 two main objectives would be (a) capacity-building and (b) building awareness among decision makers in order to strengthen local support for the operational use of space technologies.



4. 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. The Committee further noted that the activities of the Programme would support, where feasible, the action teams established by the Committee to implement the recommendations of UNISPACE III.

5. The Committee took note of the activities of the Programme carried out in 2002 as set out in the report of the Scientific and Technical Subcommittee (A/AC.105/804, paras. 37-41). 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 2003, as set out in the report of the Subcommittee (A/AC.105/804, para. 42).

6. 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*

7. With regard to the United Nations activities organized in the first half of 2003, the Committee expressed its appreciation for the following activities:

(a) United Nations/Romania/European Space Agency Regional Workshop on the Use of Space Technology for Disaster Management, held in Poiana Brasov, Romania from 19 to 23 May 2003;

(b) Thirteenth United Nations/Sweden International Training Course on Remote Sensing Education for Educators, held in Stockholm and Kiruna, Sweden, from 5 May to 13 June 2003.

8. The Committee endorsed the following workshops, training courses, symposiums and conferences planned for the remaining part of 2003, based on the programme of activities described in the report of the Expert on Space Applications (A/AC.105/790 and Corr.1, annex II):

(a) United Nations/European Space Agency Workshop on Remote Sensing Applications and Education, to be held in Damascus from 29 June to 3 July 2003;

(b) United Nations/Thailand Workshop on the Contribution of Space Communication Technology to Bridging the Digital Divide, to be held in Thailand from 1 to 5 September 2003;

(c) United Nations/Austria/European Space Agency Symposium on Space Applications to Support the Plan of Implementation of the World Summit on Sustainable Development, to be held in Graz, Austria, from 8 to 11 September 2003;

(d) United Nations/International Astronautical Federation Workshop on Education and Capacity Building in Space Technology for the Benefit of Developing Countries with emphasis on remote sensing applications, to be held in Bremen, Germany, from 25 to 27 September 2003;

(e) Fourth United Nations/International Academy of Astronautics Workshop on Small Satellites in the Service of Developing Countries: a Contribution to Sustainable Development, to be held in Bremen, Germany, on 30 September 2003;

(f) United Nations/Republic of Korea Workshop on Space Law, entitled "United Nations treaties on outer space: actions at the national level", to be held in Daejeon, Republic of Korea, from 3 to 6 November 2003;

(g) United Nations/United States of America Training Course on Satellite-Aided Search and Rescue, to be held in Miami, Florida, United States, from 10 to 14 November 2003;

(h) United Nations/Saudi Arabia Regional Workshop on the Use of Space Technology for Disaster Management, to be held in Saudi Arabia from 13 to 17 December 2003;

(i) United Nations/United States of America International Workshop on the Use and Applications of Global Navigation Satellite Systems, to be held in Vienna from 8 to 12 December 2003;

(j) Panel of Experts on Satellite Communications Technology to Bridge the Digital Divide, to be held in Geneva from 10 to 12 December 2003;

(k) The following workshops and training courses being organized at the regional centres for space science and technology education, affiliated to the United Nations:

(i) In India:

- a. Third nine-month postgraduate course on satellite meteorology and global climate;
- b. Fourth nine-month postgraduate course on satellite communications;
- c. Seventh nine-month postgraduate course on remote sensing and geographic information systems (GIS);
- d. International short course on remote sensing and GIS: technology and applications in natural resources and environmental management;
- e. Third nine-month postgraduate course on space and atmospheric science;
- f. International short training course on geoinformatics for biodiversity assessment;

- (ii) In Morocco:
    - a. First nine-month training course on satellite meteorology, completed in 2002;
    - b. Second nine-month training course on satellite communications, which started in November 2002;
    - c. International Workshop on the Use of Space Technology in Telemedicine, to be held in June 2003;
  - (iii) In Nigeria: nine-month training course on satellite communications and GIS, which started in December 2002;
  - (iv) In Brazil: the first postgraduate course in remote sensing and GIS, from April to December 2003.
9. The Committee endorsed the following programme of workshops, training courses, symposiums and conferences planned for 2004, for the benefit of developing countries:
- (a) Fourteenth United Nations/Sweden International Training Course on Remote Sensing Education for Educators, to be held in Stockholm and Kiruna, Sweden, in May-June 2004;
  - (b) Twelfth United Nations/European Space Agency Workshop on Basic Space Science, to be held in China from 24 to 28 May 2004;
  - (c) United Nations/Austria/European Space Agency Symposium on the Operational Use of Space Technology in Sustainable Development, to be held in Graz, Austria, in September 2004;
  - (d) United Nations/International Astronautical Federation Workshop on the Use of Space Technology for the Benefit of Developing Countries, to be held in Canada;
  - (e) United Nations International Workshop on the Use of Space Technology for Disaster Management, to be held in Germany;
  - (f) United Nations/Space and Upper Atmosphere Research Commission Seminar on Space Technology Applications: Monitoring and Protection of the Natural Environment, to be held in Islamabad in August/September 2004;
  - (g) United Nations workshop on space law;
  - (h) United Nations Workshop on Satellite-Aided Search and Rescue;
  - (i) United Nations Workshop on the Contribution of Satellite Communication Technology to Bridging the Digital Divide;
  - (j) United Nations/Islamic Republic of Iran Workshop on the Use of Space Technology for Environmental Security, Disaster Rehabilitation and Sustainable Development, to be held in May 2004;
  - (k) United Nations/European Space Agency/Switzerland/Austria Workshop on Remote Sensing in the Service of Sustainable Development in Mountain Areas, to be held in Kathmandu in 2004;

(l) Several workshops to be organized at the regional centres for space science and technology education affiliated to the United Nations.

10. The Committee noted with appreciation financial contributions of \$130,000 from the European Space Agency (ESA) to the United Nations Programme on Space Applications in 2002 and \$500,000 from the Government of the United States for activities of the Programme from 2001 to 2003; and \$60,000 from the National Oceanic and Atmospheric Administration of the United States on behalf of the Committee on Earth Observation Satellites (CEOS) and €55,000 from the Government of France in support of workshops on disaster management. The Committee also noted with appreciation that the Government of the Libyan Arab Jamahiriya had contributed €6,800 and the Government of Austria had contributed €2,880 for activities relating to World Space Week in 2002. The Committee noted with appreciation that, since its previous session, additional resources for 2002 had been offered by various member States and organizations and had been acknowledged in the report of the Expert (A/AC.105/790 and Corr.1, paras. 41 and 42).

11. The Committee noted with appreciation the provision, by host countries and entities, of experts to serve as instructors and speakers in activities of the United Nations Programme on Space Applications in 2003. It also noted with appreciation that the Government of France had provided an associate expert to support the implementation of the United Nations Programme on Space Applications in 2002. It also noted with appreciation the financial and other assistance that had been provided for the Programme by the Government of Austria, the Government of Styria and the City of Graz, Austria, and the Department of Physical Geography of Stockholm University, Metria, the National Land Survey of Sweden and the Swedish International Development Cooperation Agency.

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 other support to the centres. The Committee noted with appreciation the continuing efforts undertaken by the United Nations Programme on Space Applications, in accordance with General Assembly resolution 45/72 of 11 December 1990, in leading an international effort to establish regional centres for space science and technology education in existing national or regional educational institutions in developing countries, as contained in the document entitled "Regional centres for space science and technology education (affiliated to the United Nations)" (A/AC.105/782). The Committee also noted that, once established, each centre could expand and become part of a network that could cover specific programme elements in established institutions related to space science and technology in each region.

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

13. The Committee expressed appreciation to ESA for having offered two fellowships for 2002 for research in remote sensing technology at the facilities of the European Space Research Institute of ESA in Frascati, Italy, and three fellowships for research in satellite communications and remote sensing technology at the facilities of the European Space Research and Technology Centre (ESTEC) of ESA in the Netherlands. It was noted that for 2003 two fellowship opportunities in remote sensing technology would be available at the ESA European Space Research

Institute facilities and that the three fellowships at ESTEC would become available in due course.

14. 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*

15. The Committee noted that the Programme had provided technical advisory services in support of projects involving regional space applications, as indicated in the report of the Expert on Space Applications (A/AC.105/790, paras. 26-35), including the following:

(a) Collaboration with ESA on follow-up pilot projects in Africa, Asia and the Pacific, Latin America and the Caribbean and Western Asia relating to the series of workshops on basic space science, and collaboration with ESA and the Department of Economic and Social Affairs of the Secretariat in providing the technical assistance and expertise required for the joint United Nations/ESA follow-up programme on the use of remote sensing technology in sustainable development;

(b) Providing assistance to support the growth and operation of the Asia-Pacific Satellite Communications Council, technical assistance in the preparations for the Council's 2003 conference and exhibition and assistance in extending the Council's membership;

(c) Providing assistance to the Disaster Management Support Group of CEOS;

(d) A presentation made to the sixteenth plenary meeting of CEOS, held in Frascati, Italy, on 20 and 21 November 2002, on the progress made by the Committee on the Peaceful Uses of Outer Space and its Scientific and Technical Subcommittee in implementing the recommendations of UNISPACE III, in particular through the action teams established by the Committee. The representative of the Office for Outer Space Affairs briefed CEOS on the results of the workshops on the use of space technology in disaster management, organized under the Programme for the regions of Africa, Asia and the Pacific in 2002. The workshops had been co-sponsored by CEOS;

(e) Supporting Colombia in its role as pro tempore secretariat to implement the Plan of Action of the Fourth Space Conference of the Americas.

(f) Co-sponsoring the 21st Plenary Meeting of the Latin American Society on Remote Sensing and Spatial Information Systems and the Tenth Latin American Symposium on Remote Sensing, held in Cochabamba, Bolivia, from 11 to 15 November 2002.

(iv) *Promotion of greater cooperation in space science and technology*

16. The Committee on the Peaceful Uses of Outer Space noted that the United Nations Programme on Space Applications had co-sponsored the Panel on Space Research in Developing Countries, held at the thirty-fourth Scientific Assembly of

the Committee on Space Research during the World Space Congress 2002, which was held in Houston, Texas, United States, from 10 to 19 October 2002.

17. The Committee also noted that the Programme, in cooperation with ESA, would support in 2003 a pilot project in Africa on the development of an information system for determining, monitoring and assessing African flood areas together with the establishment of an inventory of superficial waters in the Nakambé river basin in Burkina Faso.

18. The Committee also noted that the Office for Outer Space Affairs had contributed to the first Space Policy Summit, held during the World Space Congress, that had brought together world space leaders to discuss space exploration, space commerce and space applications. The summit continued the cooperation of the Office with the American Institute of Aeronautics and Astronautics.

**(b) International space information service**

19. The Committee noted with satisfaction that the fourteenth in the series of documents containing selected papers from the activities of the Programme, entitled *Seminars of the United Nations Programme on Space Applications*, had been issued.<sup>1</sup>

20. 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](http://www.oosa.unvienna.org)), which contained, among other things, a regularly updated index of objects launched into outer space, information on the status of United Nations treaties governing activities in outer space, a calendar of meetings and activities of the United Nations Programme on Space Applications and documents of the Committee and its subcommittees in all six official languages of the United Nations. 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](http://www.uncosa.unvienna.org)).

**(c) Regional and interregional cooperation**

21. 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 compatibility of space systems and providing access to launch capabilities at reasonable cost.

22. The Committee noted with satisfaction the success of the Fourth Space Conference of the Americas that had been held in Cartagena de Indias, Colombia, from 14 to 17 May 2002. The Conference had discussed mechanisms for cooperation and coordination between countries in the region in various areas of space science and technology, with respect to their applications in areas such as disaster management, tele-education, telemedicine and public health and environmental protection and in fields such as space law and telecommunications. The Committee noted that in 2003 the Office for Outer Space Affairs and the international support group of the Fourth Space Conference of the Americas were

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<sup>1</sup> United Nations publication, Sales No. E.03.I.9.

providing technical advice to Colombia, acting as the pro tempore secretariat of the Fourth Space Conference of the Americas, in its implementation of the Plan of Action of the Conference. The Committee welcomed the memorandum of understanding between the Office for Outer Space Affairs and the Pro Tempore Secretariat of the Conference, under which the parties demonstrated their intention to collaborate in promoting and implementing joint activities, in particular through the United Nations Programme on Space Applications and in promoting cooperation on projects at the regional level. The Committee also noted the desire of member States in the Latin American and Caribbean region to institutionalize the Space Conference of the Americas.

23. 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 centres be established on the basis of affiliation to 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. In this respect, the Committee noted with satisfaction that the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean had signed a memorandum of understanding with the Office for Outer Space Affairs, through which the Centre had become affiliated to the United Nations.

24. The Committee noted with satisfaction that, since its establishment in 1995, the Centre for Space Science and Technology Education in Asia and the Pacific had held 16 nine-month postgraduate courses: seven courses on remote sensing and GIS, three courses on satellite communications, three courses on satellite meteorology and global climate and three courses on space and atmospheric science. In 2002/2003, the Centre was offering the following courses: (a) the third nine-month postgraduate course on satellite meteorology and global climate; (b) the third nine-month postgraduate course on space and atmospheric science; and (c) the seventh nine-month postgraduate course on remote sensing and GIS. A total of 480 scholars from 28 countries have benefited from the educational activities of the Centre. The eighth meeting of the Governing Board of the Centre and the fifth meeting of its Advisory Committee were held in Bangalore, India, on 26 and 28 May 2003, respectively. Professor Karl Harmsen of the Netherlands had taken over as the new Director of the Centre in April 2002, at the end of the term of B. L. Deekshatulu, the founding Director. The Committee noted with satisfaction that Kazakhstan had ratified the Agreement of the Centre for Space Science and Technology Education in Asia and the Pacific, meaning that all the original 10 signatories had ratified the Agreement. As per the provisions of the Agreement, its entry into force would be announced by the host country.

25. The Committee noted with appreciation that the Government of China had established the Multilateral Space Cooperation secretariat for the Asia and Pacific Region. The establishment of the secretariat would play a positive role in promoting space technological cooperation in the region.

26. The Committee noted with satisfaction that a nine-month training course on satellite communications had started in November 2002 at the African Regional Centre for Space Science and Technology Education—in English Language. The Committee also noted that the Centre planned to start nine-month programmes on

remote sensing, on basic space sciences and on satellite meteorology from September 2003.

27. The Committee noted with satisfaction that in 2002 the African Regional Centre for Space Science and Technology—in French Language had completed a nine-month course on satellite meteorology and global climate and had started a nine-month training programme on satellite communications.

28. The Committee noted with satisfaction that the first nine-month courses on remote sensing and GIS had started in 2003 at the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean at its Brazilian and Mexican campuses. The second meeting of the Governing Board of the Regional Centre had been held in Mexico City on 29 April 2002 and its third meeting in Brasilia on 5 and 6 August 2002.

29. The Committee noted with satisfaction that the Regional Centre for Space Science and Technology Education for Latin America and the Caribbean, Mexico campus, was preparing to start its first course in remote sensing and GIS in late 2003. A meeting was to be held from 16 to 18 July 2003 at the National Institute of Optical and Electronic Astrophysics in Tonantzintla, Puebla, Mexico, to review the model curricula of the United Nations for remote sensing and GIS and to adapt them to meet the needs and expectations of the region.

30. The Committee noted with satisfaction that the Programme was providing technical 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.

**(d) International Satellite System for Search and Rescue**

31. 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 a part of its consideration of the United Nations Programme on Space Applications and that member States should report on their activities regarding COSPAS-SARSAT.<sup>2</sup>

32. A presentation on the status of COSPAS-SARSAT was given by K. Vincent of the United States.

33. 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 defined the technical characteristics of emergency beacons to help ensure the use of a single one common standard worldwide. COSPAS-SARSAT had expanded its space segment to include instruments in geostationary orbits that currently provided instantaneous alerts.

34. The Committee noted with satisfaction that COSPAS-SARSAT currently had 34 member States and that its members were from nearly every continent. Those States had helped to develop and implement a robust ground network and alert data distribution system. COSPAS-SARSAT had assisted in the rescue of over

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<sup>2</sup> *Official Records of the General Assembly, Fifty-sixth Session, Supplement No. 20 and corrigendum (A/56/20 and Corr.1), para. 220.*

15,000 persons since 1982. The Committee noted that COSPAS-SARSAT was a cooperative venture of great significance from both a political and a practical standpoint.

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

35. The Committee noted that, in accordance with General Assembly resolution 57/116, 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.105/804, paras. 68-77).

36. 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.

37. 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.

**3. Use of nuclear power sources in outer space**

38. The Committee noted that, in accordance with General Assembly resolution 57/116, the Scientific and Technical Subcommittee had continued its consideration of the item relating to the use of nuclear power sources in outer space.

39. The Committee noted with satisfaction that the Subcommittee, in accordance with the four-year work plan adopted by the Subcommittee at its thirty-fifth session (A/AC.105/697 and Corr.1, annex III, appendix), had considered whether or not to take any additional steps concerning the information in the report entitled "A review of international documents and national processes potentially relevant to the peaceful uses of nuclear power sources in outer space" (A/AC.105/781). The report had been finalized by the Working Group on the Use of Nuclear Power Sources in Outer Space during the thirty-ninth session of the Subcommittee, in 2002.

40. 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 during intersessional informal discussions held in Vienna on 10 June 2003.

41. The Committee also noted with satisfaction that the Subcommittee had adopted a further multi-year work plan on the use of nuclear power sources in outer space, covering the period 2003-2006. The new work plan, for developing an international technically based framework of goals and recommendations for the safety of nuclear power source applications in outer space, was contained in the report of the Subcommittee on its fortieth session (A/AC.105/804, annex III).

42. The Committee agreed that, even if it currently was not necessary to open a discussion with a view to revising the Principles Relevant to the Use of Nuclear Power Sources in Outer Space (General Assembly resolution 47/68), it was important that States making use of nuclear power sources conduct their activities in full accordance with the Principles.

43. The Committee also agreed that the Subcommittee and the Working Group should continue to receive as much input as possible on matters affecting the use of nuclear power sources in outer space and any contribution related to improving the scope and application of the Principles.

44. The view was expressed that nuclear power sources should be used in outer space only on deep space missions or in similar cases where their use was unavoidable.

**4. Means and mechanisms for strengthening inter-agency cooperation and increasing the use of space applications and services within and among entities of the United Nations system**

45. The Committee noted that, in accordance with General Assembly resolution 57/116, the Scientific and Technical Subcommittee had continued to consider an item on means and mechanisms for strengthening inter-agency cooperation and increasing the use of space applications and services within and among entities of the United Nations system. The Committee noted that, in accordance with the three-year work plan adopted by the Subcommittee at its thirty-seventh session (A/AC.105/736, annex II, para. 40), the Subcommittee had developed specific and concrete proposals and action plans for strengthening inter-agency cooperation in the use of outer space within the United Nations system and for increasing the use of space applications and services within the system in general and among particular United Nations entities. The Committee took note of the discussion of the Subcommittee on this item, as reflected in the report of the Subcommittee (A/AC.105/804, paras. 88-96).

46. The Committee noted with satisfaction that the Scientific and Technical Subcommittee had endorsed proposals to strengthen inter-agency cooperation in the use of outer space within the United Nations system, based on recommendations from the Inter-Agency Meeting on Outer Space Activities. Those proposals included: holding a half-day open informal session to which member States of the Committee would be invited to participate, for the purpose of promoting exchange of information between member States of the Committee and the members of the Inter-Agency Meeting; inviting United Nations entities to submit annual reports to the Subcommittee on specific themes; and inviting member States of the Committee to complete a list of space-related initiatives and programmes that they would carry out in response to specific action recommended in the Plan of Implementation of the World Summit on Sustainable Development. The Committee endorsed those proposals, which were reflected in the report of the Subcommittee (A/AC.105/804, paras. 93-95).

47. The Committee also noted with satisfaction that the Inter-Agency Meeting on Outer Space Activities had held its twenty-third session in Vienna from 22 to 24 January 2003 and that the report of the Inter-Agency Meeting on that session (A/AC.105/791 and Corr.1) and the report of the Secretary-General on the coordination of outer space activities within the United Nations system: programme of work for 2003 and 2004 and future years (A/AC.105/792) were before the Committee.

48. The Committee noted that the twenty-fourth session of the Inter-Agency Meeting would be hosted by the World Meteorological Organization (WMO) in Geneva in early 2004, before the forty-first session of the Subcommittee.

49. The Committee agreed that the Inter-Agency Meeting should continue to report to the Committee and the Scientific and Technical Subcommittee on its annual session.

#### **5. Implementation of an integrated, space-based global natural disaster management system**

50. The Committee noted that, in accordance with General Assembly resolution 57/116, the Scientific and Technical Subcommittee had continued its consideration of an item on implementation of an integrated, space-based global natural disaster management system. The Committee noted that, in accordance with the three-year work plan adopted by the Subcommittee at its thirty-seventh session (A/AC.105/736, annex II, para. 41), the Subcommittee had reviewed possible global operational structures to handle natural disaster management, making maximum use of existing and planned space systems. The Committee took note of the discussion of the Subcommittee on this item, as reflected in the report of the Subcommittee (A/AC.105/804, paras. 97-115).

51. The Committee stressed the importance of operational access to global satellite databases for preventing natural disasters, especially in developing countries, and the need to identify and close gaps in the coverage of remote sensing satellites so that reliable information could be provided to all disaster-affected areas.

52. The Committee noted that the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters had been activated 15 times in 2002, the latest in connection with the earthquake that had struck Algeria on 21 May 2003.

53. The Committee requested the Office for Outer Space Affairs to convene a one-day workshop for industry during its forty-seventh session, in 2004, inviting all major communications satellite operators to participate, presenting the capabilities of their systems and airing their views on how satellite-based communications could be used during natural disasters.

#### **6. Space debris**

54. The Committee noted that, in accordance with General Assembly resolution 57/116, 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 the discussion of the Subcommittee on space debris, as reflected in the report of the Subcommittee (A/AC.105/804, paras. 116-135).

55. The Committee heard a presentation by C. Portelli of Italy, entitled "Space debris: the BeppoSAX experience".

56. The Committee agreed with the Scientific and Technical Subcommittee that consideration of space debris was important, that international cooperation was needed to expand 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.105/804, para. 125), in accordance with General Assembly resolution 57/116.

57. The Committee noted with satisfaction that, in accordance with the Subcommittee's work plan on space debris, the Inter-Agency Space Debris Coordination Committee (IADC) had presented its proposals on debris mitigation (A/AC.105/C.1/L.260), based on consensus among the IADC members, at the fortieth session of the Subcommittee. According to its work plan, the Subcommittee had begun its review of the IADC proposals and discussed means of endorsing their utilization.

58. The Committee requested all its member States to study the IADC proposals and to provide their comments to the Office for Outer Space Affairs before the forty-first session of the Subcommittee, in 2004.

59. The Committee agreed that the Subcommittee at its forty-first session should establish a working group to consider comments from member States on the IADC proposals and to consider further progress on the subject, including continuing discussions on means of endorsing utilization of the IADC space debris mitigation guidelines (A/AC.105/C.1/L.260, annex).

60. The view was expressed that mitigation of space debris was also complicated by the fact that there was no official information available on which satellites were active and which had already come to the end of their active lives. In the view of that delegation, only launching States could designate a specific object officially inactive and they should be encouraged to announce that change in the status of their objects under the provisions of the Convention on Registration of Objects Launched into Outer Space (General Assembly resolution 3235 (XXIX), annex).

61. Some delegations noted that changes in the functional status of space objects had been announced in the past, for instance in connection with the decay of the Mir station and the scientific satellite BeppoSAX, and that that approach should be followed by other launching States.

62. The view was expressed that the re-entry of BeppoSAX had demonstrated the need to make the international community more aware of the dangers of space debris and that the Committee and its Scientific and Technical Subcommittee, through their work, could make an important contribution in that area.

63. The view was expressed that there was a need for an international database of national focal points responsible for exchanging information with owners of satellites that were about to re-enter the Earth's atmosphere, in order to understand the real risks involved, and for preparing possible countermeasures in their territories. The database should be continuously updated and should be made available on the web site of the Office for Outer Space Affairs.

**7. 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**

64. The Committee noted that, in accordance with General Assembly resolution 57/116, the 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.105/804, paras. 136-144).

**8. Mobilization of financial resources to develop capacity in space science and technology applications**

65. The Committee noted that, in accordance with General Assembly resolution 57/116, the Subcommittee had considered an item on mobilization of financial resources to develop capacity in space science and technology applications 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.105/804, paras. 145-151).

**9. The use of space technology for the medical sciences and public health**

66. The Committee noted that, in accordance with General Assembly resolution 57/116, the Subcommittee had considered an item on the use of space technology for the medical sciences and public health 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.105/804, paras. 152-161).

67. A satellite-based live telemedicine demonstration was presented by O. Koudelka of Austria. The Committee thanked Joanneum Research of Graz, Austria, and the Office for Outer Space Affairs for their efforts in arranging the successful demonstration.

**10. Draft provisional agenda for the forty-first session of the Scientific and Technical Subcommittee**

68. The Committee noted that, in accordance with General Assembly resolution 57/116, the Scientific and Technical Subcommittee had considered proposals for a draft provisional agenda for its forty-first session. The Subcommittee had endorsed the recommendations of its Working Group of the Whole concerning the draft provisional agenda for the forty-first session of the Subcommittee (A/AC.105/804, paras. 162-163 and annex II).

69. The Committee noted that, during the fortieth session of the Subcommittee (A/AC.105/804, annex II, para. 24), the Working Group of the Whole had recalled that, at the thirty-ninth session, it had agreed that, owing to the limited time available during the fortieth and forty-first sessions of the Subcommittee, in 2003 and 2004, in view of the review by the Subcommittee of the reports of the action teams to implement the recommendations of UNISPACE III, the organization of the

symposium by the Committee on Space Research (COSPAR) and the International Astronautical Federation (IAF) and the symposium to strengthen the partnership with industry should alternate each year. In 2004, the symposium for industry would be organized and the organization of the symposium by COSPAR and IAF would be suspended.

70. The Committee endorsed the recommendation that the symposium to strengthen the partnership with industry to be held during the first week of the forty-first session of the Subcommittee, in 2004, should address small satellite applications in agriculture, health and human security (A/AC.105/804, annex II, para. 25).

71. The Committee endorsed the recommendation that the Subcommittee should consider an agenda item on space-system-based telemedicine according to the following work plan, starting in 2004:<sup>3</sup>

#### *2004*

Presentations by member States on the status of telemedicine applications in general, and space-based telemedicine applications in particular, in use in their countries

Presentations on commercially available telemedicine systems and their capacity to use space systems by different private industries and research organizations

#### *2005*

Presentations on development of electronic biomedical equipment and compatibility with space-based telemedicine systems

Presentations by specialist organizations such as the World Health Organization on space-based telemedicine systems

Debate on limitations of space-based telemedicine systems in terms of technical parameters and user acceptability

Debate on ways and means of enhancing the capacity of developing countries to use space-based telemedicine systems, including issues such as access to space segment and training

#### *2006*

Presentations on possible bilateral or multilateral projects to develop further space-based telemedicine applications through international cooperation

72. Some delegations expressed the view that the special presentations made to the Scientific and Technical Subcommittee on a wide variety of topics, including those made by representatives of non-governmental entities, were important because they increased the technical content of the deliberations and provided timely information on new developments in space activities.

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<sup>3</sup> See document A/AC.105/804, annex II, para. 23.

73. forty-first session of the Scientific and Technical 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;  
(Third year of the work plan: IADC continues to present to the Subcommittee its proposals on debris mitigation (as required), based on consensus among IADC members; member States continue to review the IADC proposals on debris mitigation.)<sup>4</sup>
    - (b) Use of nuclear power sources in outer space;  
(Work for the year 2004 as reflected in the multi-year work plan contained in annex III of document A/AC.105/804.)
    - (c) Space-system-based telemedicine.  
(Presentations by representatives of member States on the status of telemedicine applications in general, and space-based telemedicine applications in particular, in use in their countries; presentations on commercially available telemedicine systems and their capacity to use space systems by different private industries and research organizations.)
  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) Implementation of an integrated, space-based global natural disaster management system;
    - (c) Solar-terrestrial physics.

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<sup>4</sup> A/AC.105/761, para. 130.

7. Draft provisional agenda for the forty-second 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.
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