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Scientific and Technical Subcommittee

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Draft report

I. Introduction

1. The Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space held its forty-second session at the United Nations Office at Vienna from 21 February to 4 March 2005 under the chairmanship of Dumitru-Dorin Prunariu (Romania).
2. The Subcommittee held [...] meetings.

A. Attendance

3. Representatives of the following member States of the Committee attended the session: Algeria, Argentina, Australia, Austria, Brazil, Canada, Chile, China, Colombia, Cuba, Czech Republic, Ecuador, Egypt, France, Germany, Greece, Hungary, India, Indonesia, Iran (Islamic Republic of), Iraq, Italy, Japan, Kazakhstan, Kenya, Libyan Arab Jamahiriya, Malaysia, Mexico, Mongolia, Morocco, Netherlands, Nigeria, Pakistan, Peru, Philippines, Poland, Portugal, Republic of Korea, Romania, Russian Federation, Saudi Arabia, Slovakia, South Africa, Spain, Sweden, Syrian Arab Republic, Thailand, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, United States of America, Uruguay, Venezuela (Bolivarian Republic of), Viet Nam and [...].
4. At the 618th, 620th, 630th and [...] meetings, on 21 and 22 February and 1 and [...] March, the Chairman informed the Subcommittee that requests had been received from Angola, Azerbaijan, Bolivia, Côte d'Ivoire, Israel, Slovenia, Switzerland, Tunisia, Yemen and [...] to attend the session as observers. Following past practice, those States were invited to send delegations to attend the current session of the Subcommittee and address it as appropriate, without prejudice to further requests of that nature; that action did not involve any decision of the



Subcommittee concerning status, but was a courtesy that the Subcommittee extended to those delegations.

5. The following United Nations entities were represented at the session by observers: the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Health Organization (WHO), the World Meteorological Organization (WMO), the International Atomic Energy Agency (IAEA) and [...].

6. The session was also attended by observers from the following international organizations: the Association of Space Explorers (ASE), the Committee on Earth Observation Satellites (CEOS), the Committee on Space Research (COSPAR), the European Space Agency (ESA), the International Astronautical Federation (IAF), the International Astronomical Union (IAU), the International Mobile Satellite Organization (IMSO), the International Society for Photogrammetry and Remote Sensing (ISPRS), the International Space University (ISU), the Space Generation Advisory Council (SGAC), the Spaceweek International Association (SIA) and [...].

7. A list of the representatives of States, United Nations entities and other international organizations attending the session is contained in A/AC.105/C.1/2005/CRP.2.

B. Adoption of the agenda

8. At its 618th meeting, on 21 February 2005, the Subcommittee adopted the following agenda:

1. Adoption of the agenda.
2. Statement by the Chairman.
3. General exchange of views and introduction to reports submitted on national activities.
4. United Nations Programme on Space Applications.
5. Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III).
6. Matters relating to remote sensing of the Earth by satellite, including applications for developing countries and monitoring of the Earth's environment.
7. Space debris.
8. Use of nuclear power sources in outer space.
9. Space-system-based telemedicine.
10. Near-Earth objects.
11. Space-system-based disaster management support.
12. 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.

13. Support to proclaim the year 2007 International Geophysical and Heliophysical Year.
14. Draft provisional agenda for the forty-third session of the Scientific and Technical Subcommittee.
15. Report to the Committee on the Peaceful Uses of Outer Space.

C. Documentation

9. A list of the documents that were before the Subcommittee is provided in annex I to the present report.

D. General statements

10. The Subcommittee conveyed its condolences to the States that had suffered from the impact of the tsunami disaster and its aftermath in the Indian Ocean. It noted the critical role that space-system-based disaster management support could play in preventing and managing the consequences of natural disasters, and stressed the importance and urgency of the work undertaken by the Subcommittee in this regard.

11. Statements were made by representatives of the following member States during the general exchange of views: Argentina, Austria, Brazil, Canada, Chile, China, Colombia, Cuba, Czech Republic, France, Hungary, India, Indonesia, Iran (Islamic Republic of), Italy, Japan, Libyan Arab Jamahiriya, Malaysia, Mexico, Morocco, Nigeria, Pakistan, Portugal, Republic of Korea, Romania, Russian Federation, Syrian Arab Republic, Thailand, United Kingdom and United States. The representative of Bolivia made a statement on behalf of the States Members of the United Nations that are members of the Group of Latin American and Caribbean States. The delegate of Azerbaijan made a general statement. General statements were also made by the observers for COSPAR, IAF, IAU and ISPRS.

12. At the 618th meeting, on 21 February, the Chairman made a statement outlining the work of the Subcommittee at its current session and reviewing space activities of the previous year, including important advances that had been made as a result of international cooperation.

13. Also at the 618th meeting, the Director of the Office for Outer Space Affairs of the Secretariat made a statement reviewing the work programme of the Office.

14. The Subcommittee noted with appreciation that the Government of the Republic of Korea had provided an associate expert to assist the Office for Outer Space Affairs in carrying out its work.

15. The view was expressed that the organizations having permanent observer status with the Committee had vast space-related, scientific, technical and legal knowledge and, in order for that knowledge to enrich the work of the Committee, it

was important that those organizations participate throughout the entire sessions of the Committee and its subsidiary bodies.

16. The view was expressed that the sessions of the various intergovernmental bodies held in Vienna should be organized in such a way that they would not be held simultaneously. That delegation was also of the view that the work of the working groups established by the Committee and its subsidiary bodies should be carried out with full interpretation services in the official languages of the United Nations.

E. National reports

17. The Subcommittee took note with appreciation of the reports submitted by Member States (A/AC.105/832 and Add.1 and 2, A/AC.105/C.1/2005/CRP.5 and Add.1 and 2) and considered by the Subcommittee under agenda item 3, "General exchange of views and introduction to reports submitted on national activities". The Subcommittee recommended that the Secretariat continue to invite Member States to submit annual reports on their space activities.

F. Symposium

18. Pursuant to General Assembly resolution 59/116 of 10 December 2004, a symposium on the theme "High-resolution and hyperspectral satellite data integration for precision farming, environmental monitoring and possible new applications" was held on 21 and 22 February 2005. The first session of the symposium covered high-resolution and hyperspectral satellite data integration for precision farming and environmental monitoring and was chaired by D. Vidal-Madjar (COSPAR), while the second session covered possible new applications of high-resolution and hyperspectral satellite data and was chaired by M. J. Zimmerman (IAF).

19. The presentations to the symposium included the following: "Use of high-resolution and hyperspectral satellite data for precision farming and environmental monitoring", by G. Saito, Tokyo University, Japan; "Use of very high resolution ortho-imagery in the European Land Parcel Identification System for agriculture", by O. Léo, Joint Research Centre of the European Commission, Italy; "Technologies for data fusion and applications for satellite observation systems", by A. Azcárraga Arana, SENER, Spain; "Operational applications from super-spectral data for precision farming and environmental monitoring", by P. Houdry, European Aeronautic Defence and Space Company (EADS) Astrium, France; "IRS images: an input to decision-making for agricultural and environmental applications", by V. Sundararamaiah, Indian Space Research Organisation, India; "Examples of high-resolution image applications in Morocco", by M. Merdas, Royal Centre for Remote Sensing, Morocco; "New applications for monitoring soil-supported environmental systems in urban landscapes", by G. A. Wood, Cranfield University at Silsoe, United Kingdom; and "The contribution of Earth observations to humanitarian aid and disaster reduction: lessons learned from GMES", by P. Bally, ESA. The presentations were followed by a discussion.

G. Coordination of space activities within the United Nations system and inter-agency cooperation

20. The Subcommittee noted with satisfaction that the Inter-Agency Meeting on Outer Space Activities had held its twenty-fifth session in Vienna from 31 January to 2 February 2005. The Subcommittee had before it the report of the Meeting on its deliberations (A/AC.105/842), the report of the Secretary-General on the coordination of space-related activities within the United Nations system: directions and anticipated results for the period 2005-2006 (A/AC.105/841) and the report on new and emerging technologies, applications and initiatives for space-related inter-agency cooperation (A/AC.105/843). The Subcommittee noted that the twenty-sixth session of the Inter-Agency Meeting would be hosted by UNESCO in Paris in late January 2006.

21. The Subcommittee noted with appreciation that the Inter-Agency Meeting had updated the list of major space-related initiatives and programmes of the member States of the Committee on the Peaceful Uses of Outer Space and the entities of the United Nations system that had responded to specific recommendations contained in the Plan of Implementation of the World Summit on Sustainable Development¹ (see A/AC.105/C.1/2005/CRP.4). The Subcommittee noted that the list had grown substantially over the previous year and that it served as a useful tool to avoid duplication of efforts and to create synergies among end-users and space-capability providers interested in implementing actions called for in the Plan of Implementation.

22. The Subcommittee noted that, immediately following its twenty-fifth session, on 2 February 2005, the Inter-Agency Meeting had held its second informal open session for the member States and observers of the Committee. The informal open session discussed the theme "Space technology for disaster management: opportunities within the United Nations system".

23. The Subcommittee noted with satisfaction that, in response to a request by the Committee, the Inter-Agency Meeting had considered the enhancement of the participation of United Nations entities in the work of the Committee and its subcommittees. The Subcommittee noted the agreement of the Meeting that informal open sessions, held in conjunction with the annual sessions of the Inter-Agency Meeting, provided a constructive mechanism for promoting dialogue between United Nations entities and the member States of the Committee. The Subcommittee endorsed the recommendation of the Meeting to continue holding such informal open sessions. The Subcommittee also noted that United Nations entities would consider enhancing their participation in the work of the Committee and its subcommittees by preparing written reports on matters related to specific agenda items, when requested, and by submitting information and reports on their activities related to the work of the Committee and its subcommittees.

24. The Subcommittee noted that the Inter-Agency Meeting had considered the reduced participation of some United Nations entities in the sessions of the Inter-Agency Meeting. The Subcommittee agreed with the suggestion of the Meeting that the Committee might consider encouraging those entities to participate in the work of the Inter-Agency Meeting.

25. The Subcommittee welcomed the consideration by the Inter-Agency Meeting of the matter of establishing inventories of space-related resources, in particular satellite data sets, space-based devices and educational and training materials. The establishment of such inventories would assist United Nations entities in utilizing existing resources more effectively.

H. Adoption of the report of the Scientific and Technical Subcommittee

26. After considering the various items before it, the Subcommittee, at its [...]th meeting, on [...] March 2005, adopted its report to the Committee on the Peaceful Uses of Outer Space, containing its views and recommendations, as set out in the paragraphs below.

II. United Nations Programme on Space Applications

27. In accordance with General Assembly resolution 59/116, the Scientific and Technical Subcommittee continued its consideration of agenda item 4, “United Nations Programme on Space Applications”.

28. At the 620th meeting, the Expert on Space Applications made a statement outlining the activities carried out and planned under the United Nations Programme on Space Applications.

29. The representatives of Brazil, Colombia, India, Japan and the United States made statements under this agenda item. The observer for Switzerland also made a statement.

30. The Subcommittee heard the following technical presentations under this agenda item:

(a) “New space application initiatives of ISRO: Village Resource Centres (VRC) and Edusat networks”, by the representative of India;

(b) “System of aerospace education in the Russian Federation”, by the representative of the Russian Federation;

(c) “Satellite communications in support of remote sensing applications and disaster management”, by the representative of Austria.

31. In accordance with General Assembly resolution 59/116, the Subcommittee, at its 622nd meeting, on 23 February, reconvened the Working Group of the Whole, under the chairmanship of Muhammad Nasim Shah (Pakistan). The Working Group of the Whole held [...] meetings from 23 February to [...]. At its [...] meeting, on [...], the Subcommittee endorsed the report of the Working Group of the Whole, which is contained in annex [II] to the present report.

A. Activities of the United Nations Programme on Space Applications

32. The Subcommittee had before it the report of the Expert on Space Applications (A/AC.105/840). The Subcommittee noted that the United Nations Programme on

Space Applications for 2004 had been carried out satisfactorily and commended the work accomplished by the Expert in that regard.

33. The Subcommittee noted with appreciation that, since its previous session, additional resources for 2004 had been offered by various Member States and organizations and had been acknowledged in the report of the Expert (A/AC.105/840, paras. 50 and 51).

34. The Subcommittee expressed its concern over the still limited financial resources available for carrying out the United Nations Programme on Space Applications and appealed to Member States to support the Programme through voluntary contributions. The Subcommittee 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.

35. The Subcommittee noted that the United Nations Programme on Space Applications was assisting developing countries and countries with economies in transition in participating in and benefiting from space-related activities as proposed in the recommendations of UNISPACE III, in particular those contained in “The Space Millennium: Vienna Declaration on Space and Human Development”² and those contained in the plan of action contained in the report of the Committee on the Peaceful Uses of Outer Space on the review of the implementation of the recommendations of UNISPACE III (A/59/174).

36. The Subcommittee noted that the United Nations Programme on Space Applications was aimed at promoting, through regional and international cooperation, the use of space science and technology and space-related data for sustainable economic and social development in developing countries by raising the awareness of decision makers of the cost-effectiveness and additional benefits to be obtained; establishing or strengthening the capacity in developing countries to use space technology; and strengthening outreach activities to promote awareness of the benefits obtained. The Subcommittee also noted that, in implementing the Programme, the Expert on Space Applications would take into consideration the guidelines provided by the Working Group of the Whole, contained in annex [II] to the present report.

37. The Subcommittee noted that, in addition to the United Nations conferences, training courses, workshops and symposiums planned for 2005 (see para. [...] below), there would be other activities of the Programme in 2005, which would place emphasis on:

(a) Supporting education and training for building capacity in developing countries, in particular through the regional centres for space science and technology education, affiliated to the United Nations;

(b) Providing technical assistance to promote the use of space technologies in development programmes, in particular by continuing to support or initiate pilot projects as follow-up to past activities of the Programme;

(c) Enhancing access to space-related materials and other information for dissemination to the general public and carrying out outreach activities to promote the participation of youth in space activities.

1. Year 2004

Meetings, seminars, symposiums, training courses and workshops

38. With regard to the activities of the United Nations Programme on Space Applications carried out in 2004, the Subcommittee expressed its appreciation to the Governments of Austria, Brazil, Canada, China, Germany, Iran (Islamic Republic of), Nepal, Pakistan, Saudi Arabia, the Sudan, Sweden, Switzerland, the United States, as well as ESA, International Academy of Astronautics (IAA), IAF, International Strategy for Disaster Reduction (ISDR), Space Imaging Middle East and UNESCO, for co-sponsoring the various workshops, symposiums and training courses that had been held within the framework of the Programme, referred to in the report of the Expert on Space Applications (A/AC.105/840, para. 51 and annex I).

Long-term fellowships for in-depth training

39. The Subcommittee expressed appreciation to the Government of Italy, which, through the Politecnico di Torino and the Istituto Superiore Mario Boella and with the collaboration of the Istituto Elettrotecnico Nazionale Galileo Ferraris, had offered five 12-month fellowships for 2004 for postgraduate studies in global navigation satellite systems and related applications at the Politecnico di Torino in Turin, Italy.

40. The Subcommittee 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.

Technical advisory services

41. The Subcommittee took note of the following technical advisory services provided under the United Nations Programme on Space Applications in support of activities and projects promoting regional and global cooperation in space applications (see A/AC.105/840, paras. 37-46):

(a) Providing assistance to the Asia-Pacific Satellite Communications Council (APSCC) in its efforts to promote development and cooperation in satellite communications in Asia and the Pacific;

(b) Participating in an ongoing survey on satellite broadband resources in the Asian and Pacific region, conducted jointly by the Economic and Social Commission for Asia and the Pacific, the International Telecommunication Union and APSCC;

(c) Planning to organize activities in the field of space-based tele-health, entering into a partnership with the International Society for Telemedicine and identifying, in cooperation with India and the United States, areas suitable for a project on space-based tele-health;

(d) Participating in the United Nations Institute for Disarmament Research (UNIDIR) conference and advising the member States of UNIDIR on the current status of space technologies applied in the civil and peaceful uses of outer space;

(e) Assisting the Government of Colombia, the pro tempore secretariat for the Fourth Space Conference of the Americas, in identifying and structuring pilot projects in application areas included in the plan of action of the Conference, as well as assisting the Government in organizing a seminar entitled “Agenda of Space Activities for Colombia: the Latin American Experience” and in preparing a white paper on the need to establish a national entity to coordinate space activities in Colombia and the benefits of appointing a focal person to act as a counterpart in international cooperation activities;

(f) Co-sponsoring the Space Camp of the Americas, an event organized by the Chilean Space Agency within the framework of the Fourth Space Conference of the Americas;

(g) Providing the chairperson of the Working Group on Education, Training and Capacity-Building of CEOS;

(h) Continuing to support the joint United Nations and ESA follow-up programme on the use of remote sensing technology in sustainable development;

(i) Collaborating with ESA in carrying out a project in Africa on the development of an information system for determining, monitoring and assessing flood areas and compiling an inventory of superficial waters in the Nakambé river basin of Burkina Faso;

(j) Participating in the work of the intergovernmental ad hoc Group on Earth Observations (GEO) as a member of the subgroup on capacity-building, by creating synergy between the efforts made by GEO and those made by the Committee on the Peaceful Uses of Outer Space, in particular through its action teams to implement recommendations of UNISPACE III.

2. Year 2005

Meetings, seminars, symposiums, training courses and workshops

42. The Subcommittee expressed its appreciation to the Government of Sweden and the Regional Centre for Space Science and Technology Education in Latin America and the Caribbean, affiliated to the United Nations, for jointly organizing with the Office for Outer Space Affairs the Second Regional Workshop on Evaluating the Impact of the 1990-2004 Series of the United Nations/Sweden International Training Course on Remote Sensing Education for Educators, held in São José dos Campos, Brazil, from 21 to 25 February 2005.

43. The Subcommittee recommended the approval of the following programme of meetings, seminars, symposiums, training courses and workshops, to be organized jointly by the Office for Outer Space Affairs, host Governments and other entities in 2005:

(a) United Nations/Australia Training Course on Satellite-Aided Search and Rescue, to be held in Canberra from 14 to 18 March;

(b) United Nations/Algeria/European Space Agency International Seminar on the Use of Space Technology for Disaster Management: Prevention and Management of Natural Disasters, to be held in Algiers from 22 to 26 May;

(c) United Nations/Colombia Workshop on Global Navigation Satellite System Applications for Transportation, to be held in Colombia in May;

(d) United Nations/Austria/European Space Agency Symposium on Space Applications for Sustainable Development: Supporting the Plan of Implementation of the World Summit on Sustainable Development, to be held in Graz, Austria, in September;

(e) United Nations/Argentina Training Course on Applications of Space Information and Technology to Health Issues, to be held in Cordoba, Argentina, from 19 to 23 September;

(f) United Nations/Greece Regional Workshop on the Use of Space Technology for Disaster Management: Monitoring and Assessing Seismic and Volcanic Hazards, to be held in Athens in September;

(g) United Nations/International Astronautical Federation Workshop on Space Education for Sustainable Development, to be held in Kitakyushu, Japan, on 14 and 15 October;

(h) Sixth United Nations/International Academy of Astronautics Workshop on Small Satellites in the Service of Developing Countries, to be held in Kitakyushu, Japan, on 19 October;

(i) United Nations/European Space Agency/Austria/Switzerland Expert Group Meeting on Remote Sensing in the Service of Sustainable Development in Mountain Areas, to be held in Nepal in October;

(j) United Nations/European Space Agency Workshop on Basic Space Science: International Heliophysical Year, to be held in Al-Ain, United Arab Emirates, from 20 to 23 November;

(k) United Nations/China Expert Group Meeting on Tele-health, to be held in Kunming, China, from 21 to 24 November;

(l) United Nations/Nigeria Workshop on Space Law, to be held in Abuja in November;

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

B. International space information service

44. The Subcommittee noted with satisfaction that the sixteenth in the series of documents containing selected papers from the activities of the Programme, entitled *Seminars of the United Nations Programme on Space Applications*,³ had been issued. The Subcommittee also noted with satisfaction the publication of *Highlights in Space 2004*,⁴ which had been compiled from a report prepared by COSPAR and IAF, in cooperation with the International Institute of Space Law. The Subcommittee expressed its appreciation to the contributors for their work.

45. The Subcommittee noted with satisfaction that the Secretariat had continued to enhance the International Space Information Service and the website of the Office for Outer Space Affairs (www.unoosa.org). The Subcommittee also noted with

satisfaction that the Secretariat was maintaining a website on the coordination of outer space activities within the United Nations system (www.uncosa.unvienna.org).

C. Regional and interregional cooperation

46. The Subcommittee noted with appreciation the continued work of 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. The Subcommittee 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.

47. The Subcommittee 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.

48. The Subcommittee noted with satisfaction that in 2004 the Programme had made efforts (a) to support the development of web pages for all the regional centres; (b) to disseminate information on the educational activities of the regional centres worldwide through established mail and e-mail databases; (c) to submit information on the regional centres for inclusion in international directories; (d) to develop information panels on the regional centres for incorporation in the permanent space exhibit of the Office for Outer Space Affairs at the United Nations Office at Vienna; (e) to arrange for presentations on the accomplishments of the regional centres to be made at the sessions of the Committee on the Peaceful Uses of Outer Space and during activities organized under the United Nations Programme on Space Applications; and (f) to establish a common accounting mechanism for the financial resources provided by the Programme to the regional centres.

49. The Subcommittee also noted that the highlights of the activities of the regional centres supported under the Programme in 2004 and planned activities for 2005 and 2006 were included in the report of the Expert on Space Applications (A/AC.105/840, annex III).

50. The Subcommittee noted with satisfaction that the Government of Ecuador had announced its intention to organize the Fifth Space Conference of the Americas, which would be held in Quito in July 2006, and that a group of international experts had been established to assist the Government in the organization of the Conference. The Subcommittee further noted that the Government of Chile would organize a preparatory meeting for the Conference during the International Air and Space Fair (FIDAE) to be held in Santiago in March 2006.

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

51. In accordance with General Assembly resolution 59/116, the Subcommittee continued its consideration of agenda item 6, relating to remote sensing of the Earth.

52. In the course of the discussions, delegations reviewed national and cooperative programmes in remote sensing. Examples were given of national programmes and bilateral, regional and international cooperation. The representatives of Brazil, Canada, France, India, Japan, Thailand and the United States made statements under the agenda item. The observer for CEOS also made a statement.

53. The representative of the Republic of Korea made a technical presentation entitled "Remote sensing satellite programme in the Republic of Korea".

54. The Subcommittee emphasized the importance of Earth observation satellite data to support activities in a number of key development areas, such as water resource management, coastal zone monitoring, fishing, geological studies, land-use/land-cover mapping, agriculture, forest resource management, urban planning, monitoring and assessment of soil degradation, oceanography, illicit drug control, air quality assessment, monitoring of global climate change and greenhouse gases and natural disaster prevention, mitigation and relief.

55. The Subcommittee highlighted the increased current and future availability of space-based sensors on board satellites such as the Advanced Land Observing Satellite (ALOS), Aqua, Aura, the Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations (CALIPSO) satellite, the China-Brazil Earth Resource satellites (CBERS)-2 and CBERS-2B, the Detection of Electromagnetic Emissions Transmitted from Earthquake Regions (DEMETER) satellite, the Greenhouse Gases Observing Satellite (GOSAT), the Indian National Satellite System (INSAT)-1D, the Indian Remote Sensing satellites (IRS)-1C, IRS-P3, IRS-P4 and IRS-P5 (Cartosat-1), the Korea Multi-Purpose Satellite (KOMPSAT)-2, the Land Remote Sensing satellites (Landsat)-5 and Landsat-7, the Polarization and Anisotropy of Reflectances for Atmospheric Sciences coupled with Observations from a Lidar (PARASOL) satellite, the Synthetic Aperture Radar Satellite (RADARSAT)-2, the data collection satellites SCD-1 and SCD-2, the Tropical Rainfall Measuring Mission (TRMM) satellite, which will contribute further to supporting the various areas of sustainable development.

56. The Subcommittee noted a number of international projects in the field of the use of satellite technologies aimed at supporting sustainable development, such as the environmental data collection project implemented by Brazil and Mozambique for the installation of a water and environmental monitoring system in Mozambique, the collaboration between Algeria, Nigeria and South Africa on a proposal to build and launch the African Resource Management (ARM) constellation of high-resolution satellites, the strategic partnership between China and Brazil relating to the CBERS programme and the support provided by ESA and Canada, through the "TIGER" initiative, to countries in Africa on the use of Earth observation space technologies for water resource management on the continent.

57. The Subcommittee emphasized the importance of providing non-discriminatory access to remote sensing data and to derived information at reasonable cost and in a timely manner and of building capacity for the adoption and use of remote sensing technology, in particular to meet the needs of developing countries.

58. The Subcommittee encouraged further international cooperation in the use of remote sensing satellites, in particular by sharing experiences and technologies through bilateral, regional and international collaborative projects. The Subcommittee noted the important role played by organizations such as CEOS, ISPRS and IAF and by international entities such as the Integrated Global Observing Strategy Partnership in promoting international cooperation in the use of remote sensing technology, both in research programmes and for technology applications, especially for the benefit of developing countries.

59. The Subcommittee noted with satisfaction that, at the third Earth Observation Summit, held in Brussels on 16 February 2005, representatives of over 50 countries had established GEO and had endorsed a 10-year implementation plan for a “global Earth observation system of systems”, which would provide long-lasting benefits to the entire world by coordinating current and future investments in Earth observation systems, serving a diverse set of users and ultimately providing a wide range of human, economic and environmental benefits.

60. The view was expressed that small satellites offered opportunities to develop competitive applications in Earth observation and that such small satellite missions should be developed taking into account data from existing Earth observation satellites.

61. The view was expressed that, in order to transfer technology and methodologies of Earth observation to the general user community, schools could be used to begin educating potential future users.

Notes

¹ *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August-4 September 2002* (United Nations publication, Sales No. E.03.II.A.1 and corrigendum), chap. I, resolution 2, annex.

² *Report of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space, Vienna, 19-30 July 1999* (United Nations publication, Sales No. E.00.I.3), chap. I, resolution 1.

³ United Nations publication, Sales No. E.05.I.6.

⁴ United Nations publication, Sales No. E.05.I.7.