



# General Assembly

Distr.: General  
12 January 2007

Original: English

## Committee on the Peaceful Uses of Outer Space

### Report of the Expert on Space Applications\*

#### Contents

	<i>Paragraphs</i>	<i>Page</i>
I. Introduction . . . . .	1	3
II. Mandate of the United Nations Programme on Space Applications . . . . .	2-3	3
III. Orientation of the Programme . . . . .	4-7	4
IV. Activities of the Programme. . . . .	8-57	5
A. Training for capacity-building in developing countries. . . . .	8-16	5
B. Promoting the use of and access to space-based technologies and information . . . . .	17-26	7
C. Promoting the dissemination and increasing the awareness of knowledge-based themes . . . . .	27-35	9
D. Providing technical advisory services and promoting regional cooperation . . . . .	36-43	11
E. Follow-up activities and operational initiatives . . . . .	44-54	13
F. Summary of activities related to the United Nations Programme on Space Applications . . . . .	55-57	18
V. Voluntary contributions. . . . .	58-59	18
VI. Financial provisions and administration of activities in the biennium 2006-2007. . . . .	60	19

\* It was necessary to summarize in the present report each of the activities organized during 2006 under the United Nations Programme on Space Applications, the last of which was concluded on 8 December 2006.



Annexes

I.	United Nations Programme on Space Applications: meetings, seminars, symposiums, training courses and workshops held in 2006 .....	20
II.	United Nations Programme on Space Applications: schedule of meetings, seminars, symposiums, training courses and workshops for implementation in 2007 .....	24
III.	Regional centres for space science and technology education, affiliated to the United Nations: schedule of nine-month postgraduate courses, 2006-2008 .....	26

## I. Introduction

1. At its forty-third session, in 2006, the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space reviewed the activities of the United Nations Programme on Space Applications. The Subcommittee noted that the 2005 activities of the Programme had been carried out satisfactorily. On the recommendation of the Committee, the activities of the Programme for 2006 were endorsed by the General Assembly in its resolution 60/99. The Subcommittee recommended to the Committee, for its approval, the activities scheduled for 2007 and noted the other activities of the Programme. All of the activities were to be implemented as part of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) related to space applications,<sup>1</sup> as proposed in the report of the Expert on Space Applications (A/AC.105/840) submitted to the Scientific and Technical Subcommittee at its forty-second session, in 2005. Information on the activities carried out within the framework of the Programme in 2006 and those scheduled for implementation in 2007 are presented in annexes I and II.

## II. Mandate of the United Nations Programme on Space Applications

2. In its resolution 37/90, the General Assembly expanded the mandate of the United Nations Programme on Space Applications to include, in particular, the following elements:

(a) Promotion of greater exchange of actual experiences with specific applications;

(b) Promotion of greater cooperation in space science and technology between developed and developing countries as well as among developing countries;

(c) Development of a fellowship programme for in-depth training of space technologists and applications specialists;

(d) Organization of seminars on advanced space applications and new system developments for managers and leaders of space application and technology development activities, as well as seminars for users in specific applications;

(e) Stimulation of the growth of indigenous nuclei and an autonomous technological base, with the cooperation of other United Nations organizations and/or States Members of the United Nations or members of the specialized agencies;

(f) Dissemination of information on new and advanced technology and applications;

---

<sup>1</sup> *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).

(g) Provision or arrangements for provision of technical advisory services on space applications projects, upon request by Member States or any of the specialized agencies.

3. In its resolution 59/2, the General Assembly endorsed the Plan of Action proposed by the Committee on the Peaceful Uses of Outer Space for implementation of the recommendations of UNISPACE III (A/59/174, sect. VI.B), and urged all Governments, entities of the United Nations system and intergovernmental and non-governmental entities conducting space-related activities to carry out the Plan of Action on a priority basis for the further implementation of the recommendations of UNISPACE III, in particular its resolution entitled “The Space Millennium: Vienna Declaration on Space and Human Development”.<sup>2</sup>

### III. Orientation of the Programme

4. The United Nations Programme on Space Applications is aimed at further promoting, through international cooperation, the use of space technologies and 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 disseminate awareness of the benefits obtained.

5. The overall strategy of the Programme is to focus on selected areas that are critical for developing countries, defining and working towards objectives that can be achieved in 2-5 years and building on the results of previous activities. The priority areas of the Programme as noted by the Committee on the Peaceful Uses of Outer Space at its forty-seventh session<sup>3</sup> are: (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. In each priority area, the Programme aims to promote capacity-building in space technology and awareness-raising among decision makers that strengthens local support for the operational use of space technologies.<sup>4</sup> Other Programme directions include developing capabilities 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, small satellite applications and promoting the participation of private industry in the activities of the Programme.<sup>5</sup>

6. At its forty-fourth session, the Committee identified the recommendations of UNISPACE III that had the highest priority, noting that offers had been made by interested member States to exercise leadership in implementing some of those recommendations. The Committee agreed to establish action teams to implement

---

<sup>2</sup> Ibid., chap. I, resolution 1.

<sup>3</sup> *Official Records of the General Assembly, Fifty-ninth Session, Supplement No. 20 and corrigenda (A/59/20 and Corr.1 and 2)*, para. 66.

<sup>4</sup> Ibid., para. 65.

<sup>5</sup> Ibid., para. 66.

those recommendations under the voluntary leadership of interested member States.<sup>6</sup> Programme activities have supported those action teams as much as possible.

7. The activities of the Programme concentrate on:

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

(b) Organizing workshops and seminars on advanced space applications and short- and medium-term training programmes;

(c) Strengthening its long-term fellowship programme to include support for the implementation of pilot projects;

(d) Promoting the participation of youth in space activities;

(e) Supporting or initiating pilot projects as follow-up to activities of the Programme in areas of priority interest to member States;

(f) Providing technical advisory services, on request, to Member States, bodies and specialized agencies of the United Nations system and relevant national and international organizations;

(g) Enhancing access to space-related data and other information.

## IV. Activities of the Programme

### A. Training for capacity-building in developing countries

#### 1. Regional centres for space science and technology education, affiliated to the United Nations

8. In its resolution 60/99, the General Assembly agreed that the regional centres should continue to report to the Committee on their activities annually. Pursuant to that resolution, representatives of the regional centres, located in Brazil/Mexico, India, Morocco and Nigeria, submitted reports, contained in conference room papers, and made presentations to the Committee on 13 June 2006.

9. The Government of India has continuously provided strong support to the Regional Centre for Space Science and Technology Education in Asia and the Pacific over the past decade through the Indian Space Research Organisation and the Department of Space. The Centre has conducted 23 nine-month postgraduate courses over the past 10 years. Having completed a decade of educational activities, the Centre anticipates achieving the status of an international centre of excellence in training, education and research.

10. The campuses in Brazil and Mexico of the Regional Centre for Space Science and Technology Education in Latin America and the Caribbean began organizing nine-month postgraduate courses in 2003. The Centre is supported by the National

<sup>6</sup> Ibid., *Fifty-sixth Session, Supplement No. 20* and corrigendum (A/56/20 and Corr.1), paras. 50-55.

Institute for Space Research of Brazil and the National Institute of Astrophysics, Optics and Electronics of Mexico. The Brazil campus has conducted four nine-month postgraduate courses since 2003. In 2005, the Centre's Governing Board reinforced the terms of the Agreement establishing the Centre, with the adherence of other States from Latin America and the Caribbean to the Agreement.

11. The African Regional Centre for Space Science and Technology — in French Language, based in Rabat, is supported by the Royal Centre for Remote Sensing, the Mohammadia Engineering School, the Hassan II Institute of Agronomy and Veterinary Medicine, the National Institute of Telecommunications and the National Directorate of Meteorology of Morocco. Since its inauguration in 1998, the Centre has conducted eight nine-month postgraduate courses.

12. The African Regional Centre for Space Science and Technology Education — in English Language, based in Ile-Ife, Nigeria, has been supported by the National Space Research and Development Agency of Nigeria and Obafemi Awolowo University since 1998 and has organized eight nine-month postgraduate courses. The Director of the Centre pursued political support from Governments of member States in Africa in order to strengthen the operation of the Centre for the benefit of the region.

13. All regional centres implemented education curricula developed through the United Nations expert meetings held in Dundee, United Kingdom of Great Britain and Northern Ireland, in 1989, in Granada, Spain, in 1995, and in Frascati, Italy, in 2001. Because of recent developments in space science and technology education, particularly the great amount of educational material available on the Internet, regional centres were encouraged to provide updated syllabuses of the long-term postgraduate courses to other space-related educational institutions upon request.

14. Highlights of the activities of all regional centres supported under the Programme for the period 2005-2008 are included in annex III.

## **2. Short-term training activities for capacity-building**

15. The United Nations/South Africa Training Course on Satellite-Aided Search and Rescue was held in Cape Town, South Africa, from 20 to 24 November. Organized in coordination with the Department of Transport of South Africa, the training course was aimed at raising awareness and promoting the formulation of reliable protocols in the user countries in order to improve understanding and coordination of the system's activities and operations. Participants from 12 developing countries who attended the training course were given an overview of the International Satellite System for Search and Rescue (COSPAS-SARSAT) system, including space segments, ground stations, mission control centres, distress beacons and the registration of beacons. Participants simulated rescue procedures and presented reports on national search and rescue activities, including organizational structures and current policies, estimation of the number of COSPAS-SARSAT beacons in use and future increases and contact details for the relevant authorities.

## **3. Long-term fellowship programmes for in-depth training**

16. In 2004, the Government of Italy, through the Politecnico di Torino and the Istituto Superiore Mario Boella and with the collaboration of the Istituto

Elettrotecnico Nazionale Galileo Ferraris, initiated an offer of five 12-month fellowships for postgraduate study on global navigation satellite systems (GNSS) and related applications. The third class of the fellowship programme commenced in September 2006. The Office for Outer Space Affairs of the Secretariat and the sponsoring organizations jointly selected five representatives of governmental organizations and research and academic institutions from Georgia, Mexico, Nigeria, Pakistan and Viet Nam for fellowships to study at the Politecnico di Torino in Turin, Italy.

## **B. Promoting the use of and access to space-based technologies and information**

### **1. Space technology for disaster management**

17. As recommended by UNISPACE III, the activities in the area of disaster management are aimed at covering both emergency response and risk reduction. The activities carried out this year focused on contributing to the work of the ad hoc expert group tasked by the General Assembly, in its resolution 59/2, to study the possibility of creating an international entity to provide for coordination and the means of realistically optimizing the effectiveness of space-based services for use in disaster management. That study led the Committee to propose the establishment of a new programme within the Office, to be named the United Nations Platform for Space-based Information for Disaster Management and Emergency Response.

18. To ensure coordination of that new proposed programme with other relevant activities, the Office participated in and contributed to a number of relevant activities, including the meeting of the Working Group on Tsunami Activities of the Group on Earth Observations, the annual Stakeholders Meeting of the Global Disaster Alert and Coordination System, the Third International Conference on Early Warning, the Global Monitoring for Security and Stability network of excellence of the European Commission, the Geo-information for Development Conference, the Seventeenth United Nations Regional Cartographic Conference for Asia and the Pacific and the Second International Symposium on Geo-information for Disaster Management of the International Society for Photogrammetry and Remote Sensing.

19. The United Nations Programme on Space Applications, in cooperation with the Government of the Syrian Arab Republic, the European Space Agency (ESA) and the General Organization of Remote Sensing, co-organized the United Nations/Syrian Arab Republic/European Space Agency Regional Workshop on the Use of Space Technology for Disaster Management in Western Asia and Northern Africa, held in Damascus from 22 to 26 April 2006. Workshop participants identified the requirements for increased interaction among the region's civil protection agencies and space-related institutions and for the enhanced integration of space technology into disaster prevention and management through regional cooperative projects.

### **2. Natural resource management and environmental monitoring**

20. The Programme organized the Expert Meeting on Remote Sensing Projects for the Hindu Kush-Himalayan Region, held in Kathmandu from 6 to 10 March 2006.

The meeting was co-sponsored by ESA and the International Centre for Integrated Mountain Development. The primary objective of the meeting was to implement a new module, "Himalaya from Space", for the Eduspace Programme of ESA. That meeting was a follow-up to the 2004 United Nations/Austria/Switzerland/European Space Agency/International Centre for Integrated Mountain Development Workshop on Remote Sensing in the Service of Sustainable Development in Mountain Areas. A portal was established as follow-up to the 2004 workshop (<http://spacetechnology.icimod.net/>) and, in 2007, will be updated with a low-resolution graphic version for easier access and lower dial-up connection charges.

### **3. Global Navigation Satellite Systems**

21. The United Nations/Zambia/European Space Agency Regional Workshop on the Application of Global Navigation Satellite System Technologies for Sub-Saharan Africa was held in Lusaka from 26 to 30 June 2006. Hosted by the Ministry of Health of Zambia, the workshop addressed GNSS applications in precision agriculture, e-learning, transportation, tele-health and landscape epidemiology. The participants initiated four projects (see paragraph 53 below) and identified team leaders, tentative schedules and products for each project. The Programme will remain in contact with the participants and monitor progress.

22. The United Nations/China/European Space Agency Training Course on the Use and Applications of Global Navigation Satellite Systems, held in Beijing from 4 to 8 December 2006, was co-sponsored with ESA and co-organized with the Asia-Pacific Multilateral Cooperation in Space Technology and Applications, the Ministry of Science and Technology of China and the China National Space Administration. The National Remote Sensing Center of China and the China-Europe Global Navigation Satellite System Technology Training and Cooperation Center hosted the course. The course focused on the basics of reference systems and the functional principles of satellite navigation systems, providing overviews of surveying, mapping, aviation, transport, communications and the management of natural resources, the environment and disasters.

### **4. Tele-health and tele-education**

23. In 2006, the Programme continued to demonstrate the use of space technology for health and to share information for tele-health and tele-education on public health. At the United Nations/Zambia/European Space Agency Regional Workshop on the Application of Global Navigation Satellite System Technologies for Sub-Saharan Africa, a session on GNSS implementation and uses in tele-health and landscape epidemiology presented approaches, case studies and national implementation experiences in those areas. Participants created a project to study approaches for implementing a tele-health programme for Africa. The project's first step was to perform a needs assessment, for which the Programme provided a template.

24. An expert meeting for the United Nations/India/United States of America pilot project "Telemedicine in the Reconstruction of Afghanistan" was held from 29 to 31 August in Cochin, India. The objectives of the meeting were to review the activities of the project, share views and experiences and present the current state of

the technologies and applications. The results of the meeting are described in paragraph 47 below.

## **5. Space applications for sustainable development**

25. The United Nations/Austria/European Space Agency Symposium on Space Tools for Monitoring Air Pollution and Energy Use for Sustainable Development was held in Graz, Austria, from 12 to 15 September 2006. The symposium was co-sponsored with the Ministry of Foreign Affairs and the Ministry for Transport, Innovation and Technology of Austria, the State of Styria, the city of Graz and ESA. The symposium was the first of a series of three with the overarching theme "Space applications for sustainable development: supporting the plan of implementation of the World Summit on Sustainable Development". The primary objective of the symposium was to address sustainable development through the use of space technologies for monitoring air pollution and energy production. Further symposiums in the series may explore opportunities to develop and implement pilot projects and address issues related to policy development in that area.

26. The United Nations/International Astronautical Federation Workshop on the Use of Space Technology for Water Resources Management was held in Valencia, Spain, on 29 and 30 September 2006, as an associated event of the 57th International Astronautical Congress. The workshop was co-sponsored with the International Astronautical Federation, ESA and the University of Valencia. It addressed how space technology can contribute to water resources management in developing countries by combating desertification, ensuring access to safe drinking water and managing water-related emergencies, with the primary objectives of increasing awareness among decision makers, promoting education on and public awareness of initiatives in water resources management and strengthening international and regional cooperation.

## **C. Promoting the dissemination and increasing the awareness of knowledge-based themes**

### **1. Basic space science**

27. The United Nations/National Aeronautics and Space Administration of the United States Workshop on the International Heliophysical Year 2007 and Basic Space Science was hosted by the Indian Institute of Astrophysics in Bangalore, India, from 27 November to 1 December 2006. The Workshop supported the implementation of the three-year workplan of the Scientific and Technical Subcommittee, as reflected in the report of the Subcommittee on its forty-second session (see A/AC.105/848, paras. 181-192), and deliberations at the Workshop focused on the two long-term follow-up projects described below.

28. *Basic space science astronomy projects.* Japan, through United Nations/ESA basic space science workshops, donated 45-centimetre high-grade astronomical telescopes furnished with photoelectric photometers, computer equipment and spectrographs to Singapore in 1987, Indonesia in 1988, Thailand in 1989, Sri Lanka in 1995, Paraguay in 1999, the Philippines in 2000 and Chile in 2001. Similar donations are under consideration for Bolivia, Ethiopia and Pakistan. Japan has also

facilitated the provision of planetariums to more than 20 developing countries since 1990.

29. *Instrument arrays projects for the International Heliophysical Year 2007.* A major thrust of the International Heliophysical Year 2007 is to deploy arrays of small, inexpensive instruments such as magnetometers, radio antennas, global positioning system receivers and all-sky cameras around the world to provide global measurements of ionospheric, magnetospheric and heliospheric phenomena that have practical importance for global phenomena on Earth. That activity, advanced through the United Nations National Aeronautics and Space Administration (NASA) workshops, is implemented through collaboration between the International Heliophysical Year 2007 Secretariat and the Office for Outer Space Affairs. The small instrument programme is a partnership between instrument providers and the countries to host the instruments. The lead engineer or scientist provides the instrumentation in the array, and the host nation provides manpower, facilities and operational support to obtain data with the instrument, typically at a local university. In preparation of the International Heliophysical Year 2007, the programme is already serving to deploy instrumentation, develop plans for new instrumentation and identify educational opportunities for the host countries.

30. The regional centres for space science and technology education, affiliated to the United Nations, participate in a worldwide educational outreach programme as part of the International Heliophysical Year 2007.

31. Within the framework of the Programme, the following related activities were co-organized: (a) a special session on astronomy for the developing world, held in Prague on 21 and 22 August 2006, as part of the 26th General Assembly of the International Astronomical Union; (b) a session entitled “Heliophysical processes: towards the International Heliophysical Year 2007, held in Beijing on 21 July 2006 as part of the 36th Scientific Assembly of the Committee on Space Research; (c) the School and Conference on Complex Systems and Non-extensive Statistical Mechanics, held at the Abdus Salam International Centre for Theoretical Physics, in Trieste, Italy, from 31 July to 8 August 2006.

## **2. Space law**

32. Within the framework of the Programme, the fifth United Nations Workshop on Space Law, entitled “Status, Application and Progressive Development of International and National Space Law”, was held in Kyiv from 6 to 9 November 2006. The workshop was co-organized with the Government of Ukraine, the National Space Agency of Ukraine and the International Center for Space Law of Ukraine. Participants in the workshop made the following recommendations: national regulations are required to optimize the utilization of space technologies; national space law should establish a legal regime addressing the licensing and registration of space objects and their liability and safety; a system dealing with financial responsibilities, including indemnification and insurance, needs to be established; and Governments should include space law experts in their delegations to space-related intergovernmental organizations in order to promote the development of activities related to space law.

### **3. Educational outreach to youth**

33. World Space Week, held each year from 4 to 10 October, celebrates the contribution that space science and technology can make to the betterment of the human condition. The theme of World Space Week 2006 was “Space for saving lives”. Within the framework of the Programme and in cooperation with the United Nations Information Service and the Aeronautics and Space Agency (ALR) of Austria, 50 children from a public school in Vienna were invited to celebrate World Space Week 2006 at the United Nations Office at Vienna. The children, aged 6 to 10, were briefed by experts from ALR on how satellites worked and how satellite technology could help solve problems on Earth. The children also held a model meeting of the Committee, at which they discussed, among other subjects, how to acquire more satellites to monitor deforestation and help solve environmental problems on Earth. World Space Week activities play an effective role in raising awareness among youth about how space technology benefits lives on Earth.

34. The Space Generation Advisory Council engages young space professionals in various projects in the areas of space policy, space education and outreach. In 2006, the Office for Outer Space Affairs welcomed a request from the Council to collaborate more closely and, in response, sponsored the participation of a young professional of the Council in the United Nations/International Astronautical Federation Workshop on the Use of Space Technology for Water Resources Management. Within the framework of the Programme, the Office for Outer Space Affairs plans to work with the Council on finding and evaluating proper short online courses on space-related topics. Upon completion, the sites will be linked to the website of the Office, for access by the general public.

### **4. Space information**

35. Information for Member States and the general public on the latest developments in the activities of the Programme can be found on the website of the Office for Outer Space Affairs ([www.oosa.unvienna.org/sapidx.html](http://www.oosa.unvienna.org/sapidx.html)). Activity schedules, objectives and programmes of planned activities and projects are also included on the website.

## **D. Providing technical advisory services and promoting regional cooperation**

### **1. Asia-Pacific Satellite Communications Council**

36. Within the framework of the Programme, technical advisory services continued to be provided to the Asia-Pacific Satellite Communications Council regarding its collaboration with the international satellite industry. Advisory services were provided to the technical programme of the 2006 Satellite Conference and Exhibition of the Council, held in September 2006. The conference offered a broad range of panel discussions and technical sessions under the theme “Satellites – growing with Asia”.

## **2. Use and applications of global navigation satellite systems**

37. Within the framework of the Programme, the Office for Outer Space Affairs provided support and participated in the conference “Galileo Services: Chances for Business”, held in Prague on 24 and 25 April 2006. The conference was organized by Eurisy in collaboration with ESA and the Galileo Joint Undertaking and hosted by the Czech Space Office. The conference discussed: (a) potential Galileo services and applications, with specific pilot projects; (b) market opportunities, success factors and risks of Galileo business activities; (c) the importance of public participation, in particular for the national and European programmes; and (d) the provision of directions to industry to develop services and applications.

38. Cooperation continued with the International Cartographic Association (ICA) and the International Federation of Surveyors (FIG) pursuant to the memorandums of understanding that the Office for Outer Space Affairs signed with those two organizations in 2004, which provide for cooperation based on a mutual interest in the fields of GNSS, disaster management and the management of natural resources. In that context, the Office supported an expert of ICA, who made technical presentations at a workshop on GNSS applications and made a presentation on the status of the International Committee on Global Navigation Satellite Systems at the 23rd International Congress of FIG and INTERGEO 2006.

## **3. Mountain Forum**

39. The Mountain Forum is an electronic communication global network in which mountain supporters share information and find solutions to mountain problems. The Forum’s efforts contributed significantly to global recognition of mountains, which culminated in the establishment of the international Mountain Partnership at the World Summit on Sustainable Development held in Johannesburg, South Africa, in 2002. In response to the request from the Mountain Forum, the Programme provided technical advisory services on the improvement of communications for the Forum’s project entitled “Dialogue with the grassroots”, on pursuing the use of space-based satellite broadcasting and communications technologies applicable to rural and remote areas, particularly in mountainous regions. The use of low-cost portable satellite radios for communications is inexpensive and reliable.

## **4. Armenian National Survey for Seismic Protection**

40. The Programme provided advisory assistance to the Armenian National Survey for Seismic Protection (NSSP) to develop a proposal to establish a remote sensing centre serving as the national focal point for the use of remote sensing data for natural disaster monitoring and mitigation. The centre would coordinate national efforts in the use of space technology for disaster management and information-sharing with the Ministries of Urban Development, the Ministry of Nature Protection, the Ministry of Energy and the Ministry of Territorial Administration of Armenia. The NSSP submitted the proposal to the Government of Armenia for approval in October 2006.

## **5. Fifth Space Conference of the Americas**

41. The Programme provided technical and financial support to the Fifth Space Conference of the Americas, held in Quito in July 2006. The Conference addressed

the following topics: international space law, reduction and mitigation of natural disasters, protection of the environment, tele-health and epidemiology, space education and access to knowledge. The Quito Declaration, adopted at the conclusion of the Conference, invited States of the Latin American and Caribbean region to set up national space bodies to lay the foundation for a regional body for cooperation.

#### **6. Committee on Earth Observation Satellites**

42. The Office for Outer Space Affairs continued to participate in and provide advisory assistance to the Working Group on Education, Training and Capacity-building of the Committee on Earth Observation Satellites (CEOS). The Office hosted the seventh annual meeting of the Working Group, held in Vienna from 19 to 21 April 2006. Members of the Working Group agreed to commit to a five-year strategic plan for the period 2006-2010, aimed at raising the visibility of the Working Group's contribution to the education charter of CEOS. The meeting also explored capacity-building aspects in the framework of the 10-year Implementation Plan of the Global Earth Observation System of Systems. Members of the Working Group recognized the importance of the regional centres for space science and technology education, affiliated to the United Nations, and will continue to promote efforts to share data for regional projects.

#### **7. United Nations Industrial Development Organization project — Global Mercury Project**

43. Within the framework of the Programme, support continued to be provided to the Global Mercury Project of the United Nations Industrial Development Organization (UNIDO), aimed at removing barriers to the introduction of cleaner artisanal gold mining and extraction technologies. The Programme contributed to the UNIDO study on the incorporation of space-based technologies, including satellite imaging, in the areas of reclamation strategies and mercury mobility through the environment.

### **E. Follow-up activities and operational initiatives**

#### **1. Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters**

44. Since 1 July 2003, the Office has been a cooperating body of the Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters (International Charter "Space and Major Disasters"), a mechanism through which any entity of the United Nations system responding to an emergency can request and receive free satellite data. In order to be able to respond rapidly to those urgent requests from the United Nations system, the Office has operated a hotline 24 hours a day, seven days a week. In 2006, the Charter was activated 16 times worldwide. Of that total, the Office for Outer Space Affairs activated the Charter six times on behalf of United Nations entities such as the World Food Programme and the Office for the Coordination of Humanitarian Affairs of the Secretariat. To review the roles of operation and coordination, the Office for the Coordination of Humanitarian Affairs organized a meeting in Geneva

in March 2006 for entities of the United Nations system that respond to emergencies. All participating representatives confirmed that the current system is working well, and the Office for Outer Space Affairs will continue in the role of cooperating body supporting the Charter. The Office for Outer Space Affairs participated in the fifteenth meeting of the Executive Secretariat of the Charter in Frascati, Italy, in April 2006 and reiterated the importance of the Charter in contributing to the wider use and dissemination of products based on satellite images not only for emergency response but also for reconstruction.

## **2. Space technology for disaster management in South-East Asia**

45. Within the framework of the Programme and in cooperation with the Centre for Remote Imaging, Sensing and Processing of Singapore, the Office for Outer Space Affairs launched a pilot project entitled “Mapping tsunami-affected coastal aquaculture areas in northern Sumatra using high-resolution satellite imagery”, to be carried out during a period of one year beginning 1 June 2006. The project was initiated based on an open call for proposals. A steering committee evaluated and selected the project from among 48 expressions of interest. The steering committee was composed of experts from the Office for Outer Space Affairs, the Korea Aerospace Research Institute of the Republic of Korea, the Commonwealth Scientific and Industrial Research Organisation of Australia, ESA and the Economic and Social Commission for Asia and the Pacific. The objective of the project is to produce thematic maps using high-resolution satellite images of the coastal zones in the eastern part of Aceh province, Indonesia, focusing on the extent and impact of the 2004 tsunami on coastal pond aquaculture. To engage local communities in the implementation of the project, Syiah Kuala University of Banda Aceh, Indonesia, and the World Fish Centre in Malaysia are participating in the project.

## **3. Data-sharing**

46. The Programme continues to provide African space-related institutions with Landsat multispectral scanner (MSS), Landsat thematic mapper (TM) and Landsat enhanced thematic mapper plus (ETM+) satellite data sets donated by the United States. The data is to be used for education, training and development projects at the national and regional levels. In 2006, Landsat data were provided to the following institutions: the National Cartographic Institute of Cameroon, for mapping land-use and land-cover change; the International Commission of the Congo-Ubangi-Sangha Basin of the Democratic Republic of Congo, for mapping of flood plain inundation zones during both dry and wet seasons; and the International Institute for Geo-Information Science and Earth Observation of the Netherlands, for mapping vegetation in Ghana.

## **4. Telemedicine in the reconstruction of Afghanistan**

47. The Office for Outer Space Affairs and the Governments of India and the United States co-sponsored a project on telemedicine applications in Afghanistan. Phase I of the project, focused on training, was completed in August 2005. Phase II focused on plans for developing a tele-health capability in Afghanistan, including the task of performing a needs assessment in preparation for the implementation of a national tele-health programme. With the encouragement of the Office, the Ministry of Public Health of Afghanistan established a national task force on telemedicine in

June 2006, whose main driving force was the Consultative Group for Health and Nutrition. The Office worked closely with task force members in carrying out the needs assessment. Two sessions of round-table discussions were held during an expert meeting held in India in August 2006, leading to actions involving experts to carry out practical and low cost projects in the future. The project was completed in September 2006.

#### **5. Space-based telemedicine and tele-health for Africa**

48. Within the framework of the Programme, technical and financial support was provided for the Office for Outer Space Affairs/World Health Organization panel on tele-health implementation approaches for Africa. The panel consisted of two sessions of round-table discussions at the 11th International Conference of the International Society for Telemedicine and eHealth (ISfTeH), held in Cape Town, South Africa, in November 2006. The panel was organized in cooperation with Action Team 2 on Public Health, of the Committee on the Peaceful Uses of Outer Space, the New Partnership for Africa's Development and the South African Medical Research Council. The panel discussed approaches for overcoming obstacles in implementing tele-health for Africa. Participants formed a working group to carry out four projects: to perform a needs assessment; to develop the required policy and strategy for implementing e-health; to coordinate among multiple departments for system interoperability; and to assess the status of data, including registries and demographical data, clinical records and epidemiological data.

#### **6. Telemedicine projects in Asia and the Pacific**

49. In 2006, participants in the 2005 United Nations/China Workshop on Tele-health Development in Asia and the Pacific Region continued to carry out the four projects initiated during the workshop. The status of those four projects is as follows:

(a) *Avian flu early warning methodology development using geospatial data and space technologies.* Three centres in China participated in the project and contributed to the required studies: the Institute of Microbiology and Epidemiology, the Institute of Remote Sensing Applications and the Center for Resources Satellite Data and Applications. The project was completed in August 2006;

(b) *Assessment of specifications for communication system network configurations for different applications of tele-health.* Three parties participated in the project and performed the assessment: the Asia-Pacific Multilateral Cooperation in Space Technology and Applications, the China National Space Administration, supported by Yunnan Sunpa Image Transmission Sci-Tech, and the Space and Upper Atmosphere Research Commission of Pakistan. The project was completed in December 2006;

(c) *Tele-health training.* The following five institutes offered to share their training programmes: Telemedicine for Trauma and Critical Care of the University of Arizona of the United States, Yunnan Sunpa Image Transmission Sci-Tech of China, the South African Medical Research Council, the Telemedicine/E-Health Training Center of Pakistan, the Indian Space Research Organisation; and the Amrita Institute of Medical Sciences of India;

(d) *Needs assessment.* Afghanistan completed a needs assessment by September 2006. The results were shared with the workshop participants. The Programme will continue to provide advisory services to Nepal in preparation for an assessment to begin in 2007.

50. Participating experts in projects (a) and (b) described in paragraph 49 above presented their validated results to the 11th Conference of ISfTeH. None of the four projects involved the exchange of funds. Team members contributed in-kind efforts within the resources provided by their institutes.

## **7. Telemedicine projects in Latin America and the Caribbean**

51. During the 2005 United Nations/European Space Agency/Argentina Workshop on the Use of Space Technology for Human Health, participants established the task force on health using space technologies for the Latin American and Caribbean region. A subgroup of the task force, the tele-epidemiology pan-American group, focuses on tele-epidemiology activities. The National Commission of Space Activities and the Gulich Institute of Advanced Space Studies are the main driving forces for the work planned for the group. In 2006, the group, facilitated by the Programme, accomplished the following activities:

(a) The group initiated cooperation agreements among Argentina, Bolivia, Chile, Ecuador, Italy, Paraguay and Peru. Group members from Colombia, Ecuador, Peru and Venezuela (Bolivarian Republic of) initiated a regional project using space technology to prevent malaria.

(b) The group organized a poster session entitled "Space technology as a tool for e-health: space technology-based tele-health project initiatives in developing countries" for the programme of ISfTeH at the Med-e-Tel Forum, held in Luxembourg in April 2006. The group presented 15 posters on e-health and telemedicine projects.

(c) The group organized a health workshop at the 12th Symposium of the Latin American Society of Specialists in Remote Sensing (SELPER), held in Colombia in September 2006. The workshop was co-sponsored by the Office for Outer Space Affairs. Twenty professionals from Argentina, Bolivia, Chile, Colombia, Ecuador, Mexico, Paraguay, Peru and Venezuela (Bolivarian Republic of) participated in the workshop. They presented the concept and status of 13 projects on space technology applications for human health in the areas of infectious diseases. SELPER, financially supported by ESA, published a special issue of its journal on remote sensing and geographic information systems applied to health, containing 10 papers taken from the 2006 SELPER Symposium and the 2005 United Nations/European Space Agency/Argentina Workshop.

## **8. Disaster management projects in Western Asia and Northern Africa**

52. Two follow-up projects were initiated by the participants of the United Nations/Syrian Arab Republic/European Space Agency Regional Workshop on the Use of Space Technology for Disaster Management in Western Asia and Northern Africa, held in April 2006. One project focuses on the development of an early warning strategy for disaster management using space technologies. The other aims to establish base maps for specific types of natural disasters in the region. Within the framework of the Programme, advisory services are provided to both projects

through national teams established at the workshop. The objective of those projects is to build up national and regional coordination mechanisms for improving natural disaster management and strengthening regional cooperation.

#### **9. Global navigation satellite system projects in sub-Saharan Africa**

53. Four follow-up projects were initiated by the participants of the United Nations/Zambia/European Space Agency Regional Workshop on the Application of Global Navigation Satellite System Technologies for Sub-Saharan Africa, held in Lusaka in June 2006. The four projects are as follows:

(a) Project 1, entitled “Needs assessment for preparation of effective cooperation and networking”, is aimed at enhancing cooperation and networking for GNSS applications in the region;

(b) Project 2, entitled “Mapping and data access”, is focused on consolidating data obtained from space-based sensors in a database to be made available to the public and shared among the countries of the region;

(c) Project 3, entitled “Capacity-building in GNSS education and training”, is aimed at increasing awareness among authorities of the benefits of GNSS applications and providing continuous education and training to experts and end-users through the regional centres for space science and technology education, affiliated to the United Nations, and other relevant institutes;

(d) Project 4, on the application of space technology to telehealth, is aimed at improving public health through space technologies. Within the framework of the Programme, advisory services are provided to the national teams that carry out the projects.

#### **10. Geostationary Earth orbit Occupancy Analyser Tool**

54. A project for the in-depth analysis of the geostationary Earth orbit (GEO) occupancy, the GEO Occupancy Analyser Tool (GOAT), was initiated jointly by the Office for Outer Space Affairs and Colombia, in cooperation with the International Telecommunication Union in 2004. The project, now in its second phase of development, aims to provide historical measurements of GEO occupancy. In 2006, the GOAT database was expanded to include data of nearly 700 GEO satellites launched during more than 40 years of GEO exploitation. The data contain information on payload capacity in 36 MHz equivalent transponders and the orbital position of each satellite stationed in GEO orbit. The software coding of the tool was also revised. Upon completion, GOAT will display active satellites in Geostationary orbit for any given year. It will also be able to perform a detailed analysis of the historical occupancy of geostationary orbit and provide analyses of the historical evolution of the exploitation of geostationary orbit, to be used to identify new challenges. This phase is planned to be completed in 2007, at which time GOAT will be placed on the website of the Office for Outer Space Affairs.

## **F. Summary of activities related to the United Nations Programme on Space Applications**

### **1. Activities of the Programme carried out in 2006**

55. In 2006, two expert meetings, one symposium, two training courses, one international meeting and six workshops were conducted within the framework of the Programme. The list of activities is presented in annex I.

### **2. Activities of the Programme scheduled for implementation in 2007**

56. The meetings, seminars, symposiums, training courses and workshops scheduled for 2007, including their objectives, are listed in annex II.

### **3. Activities of the regional centres for space science and technology education, affiliated to the United Nations, for 2005, 2006, 2007 and 2008**

57. The nine-month postgraduate courses offered by the regional centres for space science and technology education, affiliated to the United Nations, in 2005, 2006, 2007 and 2008 are listed in annex III.

## **V. Voluntary contributions**

58. The successful implementation of the activities of the Programme in 2006 benefited from the support and voluntary contributions in cash and in kind of Member States and their institutions, as well as from the assistance and cooperation of regional and international governmental and non-governmental organizations.

59. A number of Member States and governmental and non-governmental organizations provided support for the activities of the Programme in 2006, as follows:

(a) ESA provided \$90,000 in support of the specific activities of the Programme in 2006 that it co-sponsored (see annex I);

(b) Austria, through its Ministry for Foreign Affairs and its Ministry for Transport, Innovation and Technology, the state of Styria and the city of Graz, defrayed the costs of the international air travel of 29 participants, local organization and facilities, room and board and local transportation for participants in the symposium organized in Graz from 12 to 15 September 2006 (see annex I);

(c) The International Astronautical Federation provided €20,000 in support of the United Nations/International Astronautical Federation Workshop on the Use of Space Technology for Water Resources Management, held in Valencia, Spain, on 29 and 30 September 2006 (see annex I);

(d) The Government of the United States provided \$175,000 for 2004, 2005 and 2006 in support of several activities and selected projects related to the applications of global navigation satellite systems. In 2006, the fund was used to defray the cost of air travel for five participants from Africa attending the Technical Workshop of the African Geodetic Reference Frame, held in Cape Town, South Africa, in July 2006;

(e) The Government of the United States provided \$50,000 in support for the United Nations/India/United States Pilot Project “Telemedicine in the reconstruction of Afghanistan” to be carried out in 2005 and 2006;

(f) The Government of the Republic of Korea, through the Korea Aerospace Research Institute, provided \$20,000 in support to the Centre for Remote Imaging, Sensing and Processing of Singapore for carrying out a project entitled “Mapping tsunami-affected coastal aquaculture areas in northern Sumatra using high-resolution satellite imagery” for a period of one year beginning 1 June 2006;

(g) The host Governments of activities of the Programme defrayed the costs of local organization and facilities, room and board and local transportation for some participants from developing countries (see annex I); the total estimated in-kind support amounted to \$420,380;

(h) Member States and their space-related institutions, as well as regional and international organizations, provided sponsorship for experts to make technical presentations and participate in deliberations during activities of the Programme (see annex I and reports on the activities).

## **VI. Financial provisions and administration of activities in the biennium 2006-2007**

60. The activities of the Programme in 2007 covered in the present report will be implemented as follows:

(a) *Financial provisions.* Under the regular budget of the United Nations, from the resource allocation for fellowships and grants in the programme budget approved by the General Assembly at its sixtieth session for implementing the activities of the Programme during the biennium 2006-2007, an amount of \$413,300 will be used to implement the activities of the Programme in 2007. In order to carry out effectively its mandated and expanded activities, in particular those aimed at implementing the recommendations of UNISPACE III, the Programme must solicit additional funds, in the form of voluntary contributions, in support of its activities. Those contributions will be used to supplement the regular budget of the Programme;

(b) *Administration by and contributions and participation of staff.* The staff of the Office for Outer Space Affairs, in particular the Expert on Space Applications, will carry out the activities described in the present report. In that connection, travel will be undertaken as appropriate by the staff of the Office under the provisions of the travel budget of the Office for the biennium and as may be necessary from voluntary contributions.

## Annex I

## United Nations Programme on Space Applications: meetings, seminars, symposiums, training courses and workshops held in 2006

<i>Title of activity and place and date held</i>	<i>Sponsoring country</i>	<i>Sponsoring organization</i>	<i>Host institution</i>	<i>Funding support</i>	<i>Number of countries and entities represented</i>	<i>Number of participants</i>	<i>Document symbol of report</i>
United Nations/European Space Agency/International Centre for Integrated Mountain Development Expert Meeting on Remote Sensing Projects for the Hindu Kush-Himalayan Region Kathmandu 6-10 March 2006	Nepal	United Nations and the European Space Agency (ESA)	International Centre for Integrated Mountain Development (ICIMOD)	The United Nations and ESA provided full financial support for seven participants. ICIMOD provided conference facilities and technical support.	8	40	A/AC.105/870
United Nations/Syrian Arab Republic/European Space Agency Regional Workshop on the Use of Space Technology for Disaster Management in Western Asia and Northern Africa Damascus 22-26 April 2006	Syrian Arab Republic	United Nations, the Government of the Syrian Arab Republic and ESA	General Organization of Remote Sensing (GORS)	The United Nations and ESA provided full financial support for 19 participants and partial support for 6 participants. GORS provided accommodations to funded participants, as well as conference facilities, technical support and local transportation.	23	70	A/AC.105/875

<i>Title of activity and place and date held</i>	<i>Sponsoring country</i>	<i>Sponsoring organization</i>	<i>Host institution</i>	<i>Funding support</i>	<i>Number of countries and entities represented</i>	<i>Number of participants</i>	<i>Document symbol of report</i>
United Nations/Zambia/ European Space Agency Regional Workshop on the Application of Global Navigation Satellite System Technologies for Sub- Saharan Africa  Lusaka 26-30 June 2006	Zambia	United Nations, the Government of Zambia and ESA	Ministry of Health of Zambia	United Nations and ESA provided full financial support for 15 participants. The International Cartographic Association covered the cost of air travel for one speaker; the Ministry of Health of Zambia provided meals for 15 participants, as well as facilities and local transportation for all participants.	24	60	A/AC.105/876
United Nations/India/United States of America Pilot Project "Telemedicine in the Reconstruction of Afghanistan" Expert Meeting  Cochin, India 29-31 August 2006	United States of America and India	United Nations, the Government of the United States of America and the Indian Space Research Organisation (ISRO)	Amritha Institute of Medical Sciences	The United States provided full financial support for 26 participants. ISRO provided 5 resource experts.	10	40	..
United Nations/Austria/European Space Agency Symposium on Space Tools for Monitoring Air Pollution and Energy Use for Sustainable Development  Graz, Austria 12-15 September 2006	Austria	United Nations, the Government of Austria and ESA	Space Research Institute of the Austrian Academy of Sciences and Joanneum Research	The United Nations and co-sponsors provided full financial support for 30 participants.	31	60	A/AC.105/877

<i>Title of activity and place and date held</i>	<i>Sponsoring country</i>	<i>Sponsoring organization</i>	<i>Host institution</i>	<i>Funding support</i>	<i>Number of countries and entities represented</i>	<i>Number of participants</i>	<i>Document symbol of report</i>
United Nations/International Astronautical Federation Workshop on the Use of Space Technology for Water Resources Management Valencia, Spain 29 and 30 September 2006	Spain	United Nations, the International Astronautical Federation (IAF), ESA and the University of Valencia	University of Valencia	The United Nations and co-sponsors provided full financial support for 19 participants and partial support for 8 participants. IAF waived the registration fees for the International Astronautical Congress for 25 participants.	31	55	A/AC.105/878
Seventh United Nations/International Academy of Astronautics Workshop on Small Satellites in the Service of Developing Countries Valencia, Spain 3 October 2006	Spain	United Nations and the International Academy of Astronautics (IAA)	IAA	..	..	60	A/AC.105/884
Meeting of the International Committee on Global Navigation Satellite Systems* Vienna 1 and 2 November 2006  *Organized by the Office for Outer Space Affairs of the Secretariat as part of its support to the implementation of the recommendations of UNISPACE III	United Nations	United Nations and the Government of the United States	Office for Outer Space Affairs of the Secretariat	The United Nations provided conference facilities.	18	50	A/AC.105/879
United Nations/Ukraine Workshop on Space Law: Status, Application and Progressive Development of International and National Space Law Kyiv 6-9 November 2006	Ukraine	United Nations and the Government of Ukraine	National Space Agency of Ukraine and the International Center for Space Law	The United Nations and the Government of Ukraine provided full financial support for 22 participants.	21	65	A/AC.105/880

<i>Title of activity and place and date held</i>	<i>Sponsoring country</i>	<i>Sponsoring organization</i>	<i>Host institution</i>	<i>Funding support</i>	<i>Number of countries and entities represented</i>	<i>Number of participants</i>	<i>Document symbol of report</i>
United Nations/South Africa Training Course on Satellite-Aided Search and Rescue Cape Town, South Africa 20-24 November 2006	South Africa	United Nations and the Government of South Africa	Department of Transport of South Africa	The United Nations and the Government of South Africa provided full financial support for 15 participants.	19	45	A/AC.105/881
Second United Nations/National Aeronautics and Space Administration Workshop on the International Heliophysical Year 2007 and Basic Space Science Bangalore, India 27 November-1 December 2006	India	United Nations, the Government of India and the National Aeronautics and Space Administration (NASA) of the United States	Indian Institute of Astrophysics	The United Nations, the Government of India and NASA provided full financial support for 30 participants.	25	150	A/AC.105/882
United Nations/China/European Space Agency Training Course on the Use and Applications of Global Navigation Satellite Systems Beijing 4-8 December 2006	China	United Nations, the Government of China, the China National Space Administration, the Asia-Pacific Multilateral Cooperation in Space Technology and Applications and ESA	National Remote Sensing Center of China and the China-Europe Global Navigation Satellite System Technology Training and Cooperation Center	United Nations and ESA provided full financial support for 20 participants. Co-sponsors provided facilities and local transportation.	25	50	A/AC.105/883

## Annex II

## United Nations Programme on Space Applications: schedule of meetings, seminars, symposiums, training courses and workshops for implementation in 2007

<i>Activity</i>	<i>Title</i>	<i>Place and date</i>	<i>Objectives</i>
1	United Nations/Morocco/ European Space Agency International Workshop on the Use of Space Technology for Sustainable Development	Rabat 25-27 April 2007	To increase the awareness of decision makers on the use of Earth observation satellites for environmental monitoring; to exchange views on space technology applications; to define infrastructure of regional cooperative mechanisms; and possibly to develop regional pilot projects.
2	United Nations/Mexico/ Pan-American Health Organization Training Course on Satellite Technology for Tele-health	Mexico City 25-29 June 2007	To introduce satellite technologies for health-care applications and hands-on experience in operating diagnostic equipment for tele-health services, as well as the telemedicine concept and systems, including requirements for connecting remote areas.
3	United Nations/European Space Agency/National Aeronautics and Space Administration Workshop on Basic Space Science and the International Heliophysical Year 2007	Tokyo 2007	To explore how basic space science and the International Heliophysical Year 2007 are contributing to sustainable development and capacity-building; to review the status of the donation of planetariums and astronomical telescope facilities to developing countries and the deployment of low-cost, ground-based, worldwide instrument arrays for the International Heliophysical Year 2007.
4	United Nations/Austria/ European Space Agency Symposium on Space Tools for Monitoring Air Pollution and Managing Energy Resources	Graz, Austria September 2007	To examine the benefits of space science and technology and their applications to address the Plan of Implementation of the World Summit on Sustainable Development; <sup>a</sup> to explore the possibilities of developing pilot projects on monitoring air pollution and energy use; and to address issues related to policy development.
5	United Nations/ International Astronautical Federation Workshop on the Use of Space Technology for Sustainable Development Towards Food Security.	Hyderabad, India 21-22 September 2007	To review initiatives in space technologies applied to the sustainable development of food security for poverty eradication in developing countries; and to explore building synergies based on international cooperation.
6	United Nations/Russian Federation/European Space Agency Workshop on the Use of Microsatellite Technologies for Monitoring the Environment and Its Impact on Human Health	Moscow 3-7 September 2007	To review the use of microsatellite technologies in detecting potentially dangerous and catastrophic phenomena on the Earth's surface and in the atmosphere, ionosphere and magnetosphere; to explore the influence of low-frequency disturbances of the Earth's magnetic field on the health of humans and living organisms; and to address aerospace biomedicine and biology issues and space education on the use of microsatellites in environmental monitoring.
7	United Nations Workshop on Space Law	North Africa/West Asia November 2007	To build capacity in space law, particularly with reference to the United Nations treaties and principles on outer space.

<i>Activity</i>	<i>Title</i>	<i>Place and date</i>	<i>Objectives</i>
8	United Nations/Viet Nam/ European Space Agency Workshop on Forest Management and Environmental Protection	Hanoi 5-9 November 2007	To increase awareness among managers and decision makers of the use of space technologies to deal with environmental issues such as forest management, environmental security and natural hazard prevention and mitigation.
9	United Nations/Argentina/ European Space Agency Workshop on Sustainable Development in Mountain Areas of Andean Countries	Mendoza, Argentina 26-30 November 2007	To discuss space technology applications to mountain areas for the sustainable development; and to develop case studies using remote sensing for Andean countries.
10	First United Nations Regional Workshop on the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (SPIDER)	Khartoum 2007	To provide a forum to promote the sharing of knowledge; to develop communities of practice; and to strengthen existing networks for disaster management.

<sup>a</sup> *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.

## Annex III

### Regional centres for space science and technology education, affiliated to the United Nations: schedule of nine-month postgraduate courses, 2006-2008

#### 1. Regional Centre for Space Science and Technology Education in Asia and the Pacific

<i>Year</i>	<i>Venue</i>	<i>Activity</i>
2005-2006	Indian Institute of Remote Sensing, Dehra Dun, India	Tenth Postgraduate Course on Remote Sensing and Geographical Information Systems (GIS)
2005-2006	Space Applications Centre, Ahmedabad, India	Fifth Postgraduate Course on Satellite Communications
2006-2007	Indian Institute of Remote Sensing, Dehra Dun, India	Eleventh Postgraduate Course on Remote Sensing and GIS
2006-2007	Space Applications Centre, Ahmedabad, India	Fifth Postgraduate Course on Satellite Meteorology and Global Climate
2006-2007	Physical Research Laboratory, Ahmedabad, India	Fifth Postgraduate Course on Space and Atmospheric Science

#### 2. African Regional Centre for Space Science and Technology – in French language

<i>Year</i>	<i>Venue</i>	<i>Activity</i>
2005-2006	Mohammadia School of Engineers, University of Mohamed V, Agdal, Rabat	Fourth Postgraduate Course on Remote Sensing and GIS
2006-2007	Mohammadia School of Engineers, University of Mohamed V, Agdal, Rabat	Fifth Postgraduate Course on Remote Sensing and GIS
2007-2008	Mohammadia School of Engineers, University of Mohamed V, Agdal, Rabat	Third Postgraduate Course on Satellite Communications
2007-2008	Mohammadia School of Engineers, University of Mohamed V, Agdal, Rabat	Third Postgraduate Course on Satellite Meteorology and Global Climate

### 3. African Regional Centre for Space Science and Technology Education – in English language

<i>Year</i>	<i>Venue</i>	<i>Activity</i>
2006	Obafemi Awolowo University, Ile-Ife, Nigeria	Fifth Postgraduate Course on Remote Sensing and GIS
2007	Obafemi Awolowo University, Ile-Ife, Nigeria	Postgraduate courses on Remote Sensing and GIS, Satellite Meteorology and Global Climate, Satellite Communications and Space and Atmospheric Sciences

### 4. Regional Centre for Space Science and Technology Education in Latin America and the Caribbean

<i>Year</i>	<i>Venue</i>	<i>Activity</i>
2007-2008	National Institute for Space Research, São José dos Campos, Brazil	Fifth Postgraduate Course on Remote Sensing and GIS
2007-2008	National Institute for Space Research, São José dos Campos, Brazil	First Postgraduate Course on Satellite Communications
2007-2008	National Institute for Space Research, São José dos Campos, Brazil	First Postgraduate Course on Satellite Meteorology and Global Climate
2007-2008	National Institute for Space Research, São José dos Campos, Brazil	First Postgraduate Course on Space and Atmospheric Science
2007-2008	National Institute of Astrophysics, Optics and Electronics, Tonantzintla, Puebla, Mexico	Second Postgraduate Course on Remote Sensing and GIS
2007-2008	National Institute of Astrophysics, Optics and Electronics, Tonantzintla, Puebla, Mexico	First Postgraduate Course on Satellite Communications