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A/AC.105/C.1/2004/CRP.5
23 February 2004

Original: English only

COMMITTEE ON THE PEACEFUL USES OF
OUTER SPACE
Scientific and Technical Subcommittee
Forty-first session
Vienna, 16-27 February 2004
Agenda item 6
Implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III)

INTERNATIONAL COOPERATION IN THE PEACEFUL USES OF OUTER SPACE: ACTIVITIES OF INTERNATIONAL ORGANIZATIONS THAT HAVE CONTRIBUTED TO IMPLEMENTING THE RECOMMENDATIONS OF THE THIRD UNITED NATIONS CONFERENCE ON THE EXPLORATION AND PEACEFUL USES OF OUTER SPACE (UNISPACE III)

Note by the Secretariat*

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* This document has not been formally edited. It will be edited, translated into all official languages of the United Nations and distributed as document A/AC.105/819/Add.1 after the forty-first session of the Scientific and Technical Subcommittee.

International Astronautical Federation (IAF)

[Original Text: English]

1. Introduction

1. The IAF was founded in 1951 with the objective of fostering space activities for the benefit of mankind. It is an international, non-profit and non-governmental association, comprising over 160 member organizations from 45 countries. During the 52 years of its existence, it has become a worldwide society with its membership drawn from government organizations, industry, professional associations and learned societies. It has representatives in all parts of the world, in both developed and developing countries. It plays an important role in disseminating information, pulling together world experts in space development and utilization and providing a significant worldwide network to ensure that space activities benefit all humankind.

2. Relations with other international organizations

2. In 2002 and 2003, the IAF was represented in many international meetings such as those of the International Telecommunications Union (ITU), the World Meteorological Organization (WMO), the Committee on Space Research (COSPAR) within the Framework of the 52nd International Astronautical Congress in 2002, in Houston, USA and the United Nations Committee on the Peaceful Uses of Outer Space in Vienna, in February 2003, as the organizer of the Symposium “Applications of Satellite Navigation and their Benefit for the Developing Countries”. IAF has also collaborated with the United Nations Educational, Scientific and Cultural Organization (UNESCO)/World Commission on the Ethics of Scientific Knowledge and Technology (COMEST) on ethical issues.

3. The main activity of the IAF is to gather space experts as well as the providers of space services and their users on the occasion of Congresses and symposia.

4. The most important of these meetings is the International Astronautical Congress (IAC) which the IAF, together with its associates, the International Academy of Astronautics (IAA) and the International Institute of Space Law (IISL), organize each year in a different country. In 2002, it was successfully held in Houston in conjunction with the 34th Scientific Assembly of COSPAR during the World Space Congress.

5. From 29 September to 3 October 2003, the 54th IAC took place in Bremen, Germany, on the theme of "new.opportunities@space", a well-chosen theme in this period of transition and interrogation for space activities. It is the only Congress to span all the aspects of space activities. It gathered about 4000 participants, 400 of whom were students.

6. In 2004, the IAC will be held in Vancouver, Canada and, in 2005 in Fukuoka, Japan. The IAF has also accepted the kind proposals of Spain and India to hold its Congress in Valencia in 2006, and New Delhi in 2007, respectively.

7. The IAF is also involved in organizing or helping to organize various symposia. During the World Space Congress, held from 10 to 12 October 2002, the annual Workshop on “Space Solutions for Global Problems - Building Working Partnerships with all Stakeholders in Human Security and Development” was successfully held in Bremen. The Workshop was also co-sponsored by the American Institute of Aeronautics and Astronautics (AIAA), COSPAR, the European Space Agency (ESA) and the United Nations.

8. The IAF helped in the promotion of other symposia such as the “Conference on Space Applications for Heritage Conservation” organized by one of the IAF members (Eurisy) and co-sponsored by UNESCO and three other IAF members: ESA, the International Space University (ISU) and the National Aeronautics and Space Administration (NASA) of the United States of America.

9. The IAF granted honorary sponsorships to various other symposia such as: “Europe and Space Debris”, which was held in November 2002 in Toulouse, France.

10. The IAF prepared, in 2003, its annual report to the United Nations, "Highlights in Space Technology and Applications".

11. In February 2003, an IAF/COPUOS symposium took place in Vienna on the theme of "Applications of Satellite Navigation and their benefits to developing countries". This dedicated symposium was a successful event, which was useful for industrial and developing countries regarding geography, traffic monitoring, agriculture, environment, oceanography, etc.

12. The IAF will organize a specialists' symposium at the end of 2004, probably in Portugal, on the following theme "New Space Services for Coastal and Maritime Users, in the context of new regulation", which could associate UNESCO.

13. The role of the IAF in the UN/IAF Workshop 2003, which centred on capacity building in remote sensing and remote sensing technology education, involved participation in the preparation of the sessions by encouraging its own members to take an active part in participating in the preparation of the sessions, as authors and future speakers. The head of the ESA Space and Education Programme facilitated some participation, based on ESA Education projects with emphasis on projects involving university students. Azerbaijan, a new member of the IAF, proposed a couple of exposés, which were selected for the Workshop.

14. A wide range of presentations in the Capacity Building in Space Technology through Research and applications session, as well as in the Capacity Building in Space Technology through Education session, were finally presented, opening the way for new development in 2004. Among the various attractive themes cited in the programme, the one on the catastrophe mitigation and disaster management is probably one of the most promising for space applications in the coming years.

15. The worldwide development of space science in university and secondary schools is also a trend revealed by the presentations on education.

16. The mixing of space researchers, scientists, specialists in systems and technologies, as well as businessmen and their experience in organizing projects, is particularly innovative in this transition period and could notably contribute to maintain and extend Space services for the benefit of humankind, through such Workshops. Capacity building in Space technology through research and remote sensing technology education could rapidly become a powerful tool for the development of space applications in developing countries. An affordable use of space images for all countries is still a problem to be resolved, and is probably a key factor in acquiring capacity building in the developing countries, as long as they have not all got their own infrastructures.

17. Regarding the financing of such activities, IAF earmarked in its 2003 budget a provision for 20,000 Euros in order to cover some travel expenses reserved for participants from developing countries. Whether this particular effort should be maintained in the future or not, is a question which will rise in the coming period, and it should be clear that the friendly relationship between the UN and the IAF should be established on a mutual benefit basis, taking into account all the possible avenues of cooperation between the two organizations. The UNESCO Major Programme II on natural sciences, subdivided into "Science, environment and sustainable development" and "Capacity-building in science and technology for development", is well appropriated for such cooperation with IAF.

3. Conclusion

18. The International Astronautical Federation with its existing partnership with UN/UNESCO can: (1) facilitate the creation of networks and the launch of multilateral initiatives for the use of space services; (2) promote already existing achievements and programmes; and (3) promote how Space can be useful in solving society's problems.

United Nations Economic and Social Commission for Asia and the Pacific (ESCAP)

[Original Text: English]

1. The Second Ministerial Conference on Space Applications for Development in Asia and the Pacific was held in New Delhi in 1999. It served to put the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III) into a regional scenario, under the second phase of the Regional Space Applications Programme for Sustainable Development in Asia and the Pacific (RESAP). The programme's priorities are assisting capacity building, particularly in the least developed countries in the Asia-Pacific region, in the application of space technology to bridge the digital divide in fields of sustainable development, improved quality of life and disaster management.

2. Responding to members' and associate members' desire for more focused activity in information and communications technology (ICT), including its space component, ESCAP created the Information, Communication and Space Technology Division on 1 July 2002. The objective of this division is to strengthen the regional capacity for access to, and application of, information, communication and space technology.

Major initiatives relevant to the action teams on the implementation of the recommendations of UNISPACE III

Action team 7 (disaster management)

3. ESCAP's recent activities related to space technology applications for disaster management include promotion of regional cooperative mechanisms in disaster management, incorporating space technology. This effort aims to promote the harmonized provision and utilization of space information tools to support national disaster management efforts.

4. Toward this end, ESCAP began a significant regional initiative. Two regional workshops were held, in China and in Thailand, co-organized with China and the UN Office of Outer Space Affairs, respectively. 86 participants from 22 countries attended the first workshop, while 169 participants from 36 countries attended the second one. These two workshops reviewed regional challenges, as well as space technology applications available to the region. Participants developed priority theme areas, including drought and floods. They also endorsed the concept of developing regional cooperative mechanisms for natural disaster management.

5. During 2002, ESCAP began implementing the cooperative project on "Capacity-building for disaster management in Asia and the Pacific" with support from France, with the objective of promoting operational use of space technology for disaster management and formulating regional cooperative mechanisms on space technology applications for disaster management. This project will last at least three years. China, India and the European Space Agency have offered additional support for complementary activities, which are being developed.

Action Team 11 (sustainable development)

6. ESCAP will continue to organize regional workshops and seminars on space technology applications for environmental monitoring, natural resource management, natural disaster management, poverty alleviation, distance education and telemedicine, which aim to build national capacity in using remote sensing, Geographic Information System (GIS) and other space-related technologies to contribute to sustainable development. Projects supported by China, India, Japan, the Republic of Korea and Malaysia pursued these objectives.

Action Team 17 (capacity-building)

7. ESCAP has been continuing to provide medium- and long-term fellowships for training on remote sensing and GIS for sustainable development planning and satellite communication development and applications in specialized educational institutions in the Asia-Pacific region. Approximately 40 people from the region are supported annually under this programme, with support from China, India and Indonesia in hosting these training activities.

Action Team 18 (awareness increase)

8. ESCAP will leverage the synergy created by combining Space technology applications in its Information, Communication and Space Technology Division by promoting awareness of space-based information content, usefulness and accessibility for national decision-making to ICT decision-makers and other policymakers.

Challenges encountered

9. ESCAP's previous work in these areas has shown that single-sector approaches, or approaches made solely from the standpoint of space technology viewpoints, are sometimes inadequate to convince decision-makers in other sectors to appropriately utilize space technology.

10. However, ESCAP finds that approaching decision-makers more on their own terms (rather than expecting them to convert their thinking to the approaches and terminology of space technologists) may be successful. Thus, approaching regional cooperation in disaster management may be helped by reaching out to decision-makers on their own terms as much as possible.

Other major activities being undertaken by ESCAP that would increase the benefits of the work of the action teams

11. ESCAP's previous work in these areas has shown that the Asia-Pacific countries could benefit from support related to the development of cross-sectoral policies that enable them to take full advantage of the opportunities presented by these technologies. Such policies may help many countries to fully participate in, and manage and benefit from, the process of globalization, as well as to overcome key development challenges in a cost effective manner.

12. ESCAP believes that the cross-sectoral approaches facilitated by (i) the synergy of combining space technology and ICT activities/approaches, and (ii) by the cross-sectoral approaches possible within ESCAP's broad-based range of activities, can lend benefits to demonstrating the value of space-based applications to non-space-oriented decision makers.

13. One example of this is the application of the space component of ICT towards bridging the digital divide. ESCAP has combined space and ICT into a single sub-programme, and has been previously active in promoting sustainable development applications of satellite communications, such as tele-medicine and tele-education issues. It has been active in preparations for the World Summit on the Information Society (WSIS), helping to shape the Asia-Pacific perspective on space and WSIS.

United Nations Environment Programme (UNEP)

[Original: English]

Recommendation 1 (environmental monitoring strategy)

1. UNEP has changed the production cycle of the Global Environmental Outlook (GEO) Report from a 2-year to a 5-year base, and has initiated the preparation of the GEO Annual Statement 2003, which will be ready in early 2004.

Recommendation 7 (disaster management)

2. The Second International Conference on Early Warning and disaster Reduction (EWC-II), organized by the UN Secretariat for the International Strategy on Disaster Reduction (ISDR), in collaboration with the Government of Germany, was held in Bonn, Germany, from 16 to 17 October 2003. UNEP provided substantial input and support to the preparation of the Conference, which resulted in the announcement of an "International Platform for Early Warning" to be implemented under the aegis of the ISDR. UNEP's support to the Platform is expected to continue.

Recommendation 11 (sustainable development)

3. Satellite remote sensing technology is extensively applied in many of the early warning and other studies carried out by UNEP's Division of Early Warning and Assessment, particularly the Global and Regional Integrated Data (GRID) network of centres. Those studies include many on Earth resources (biodiversity, land cover, soil degradation, etc.), and contribute to UNEP's broader environment assessments. UNEP, in particular its Post-Conflict Assessment Unit, continues to carry out studies of the environment following conflicts in various regions of the world, such as in Afghanistan, Iraq and, more recently, in Africa, making partial use of satellite imagery, which also contribute to post-conflict recovery and re-development in a sustainable manner.

4. In May 2001, the National Aeronautics and Space Administration (NASA) of the United States of America formally presented to UNEP the 1990 and 2000 Global Landsat data sets for use by the international community. UNEP's GRID centre in Nairobi received the Landsat data for 20 degrees South latitude in October 2003 for further distribution to African countries.

5. UNEP, through its GRID centre in Nairobi, is distributing the Landsat data to African countries through a national-level strategy, where the data would be distributed to each country for dissemination to three focal points chosen by the government. Each focal point would receive full national coverage on diskettes, DVDs and CD-ROMs. UNEP will further distribute regional copies of data sets to its network of Africa Environment Outlook Regional Collaborating Centres. UNEP hopes to start providing the data to these focal points at the next African Ministerial Conference on Environment in June 2004.

6. UNEP's GRID centre in Sioux Falls, USA (co-located at the US Geographical Survey's Earth Resources Observation Systems Data Center) has delivered 943 Gegabytes (960 scenes of 1990 data and 860 scenes of 2000 data) to three regional centres in Africa: the Agro-Hydro-Meteorological (AGRHYMET) Regional Centre in Niamey, Niger; the Regional Remote Sensing Unit in Harare, Zimbabwe; and, the Regional Centre for Mapping of Resources for Development in Nairobi.

United Nations Institute for Training and Research (UNITAR) and United Nations Office for Project Services (UNOPS)

[Original Text: English]

A. Protecting the Earth's environment and managing its resources

1. On behalf of the United Nations Institute for Training and Research (UNITAR), the United Nations Office for Project Services (UNOPS), through the UNOSAT satellite imagery service, is co-operating with the United Nations Environment Programme (UNEP) Post Conflict Assessment Unit (PCAU) on a post-conflict environmental assessment of Liberia using multi-temporal satellite imagery. This activity focuses on urban expansion and changes in forest cover and coastline extent.

B. Using space applications for human security, development and welfare

2. Also on behalf of UNITAR, UNOPS, through the UNOSAT service, is assisting the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) and its Humanitarian Information Centre in Jerusalem on the monitoring of the West Bank separation wall. UNOSAT is furnishing satellite imagery and three-dimensional representations of the area of interest.

3. UNITAR and UNOPS, through UNOSAT, are cooperating with European entities in the Global Monitoring for Environment and Security (GMES) initiative by the European Space Agency and the European Commission. UNOSAT is providing assistance to GMES in developing satellite imagery based services for humanitarian assistance.

4. UNOPS is a focal point for the applications of the "International Charter 'Space and Major Disasters'", of which UN participation is co-ordinated by the United Nations Office for Outer

Space Affairs. UNITAR and UNOPS, through UNOSAT, were the first UN organizations to trigger the Charter and are repeatedly using the opportunity to receive free and timely satellite imagery during natural and technological disasters. UNOSAT has the capacity to derive user-friendly products, typically damage assessments, from the satellite imagery and distribute these to relief personnel on the ground.

5. Upon request by the United Nations Development Programme (UNDP), UNOPS has developed a dedicated system to furnish satellite imagery to the United Nations Department of Peacekeeping Operations (UN DPKO) for its peacekeeping field operations, as well as Geographic Information System (GIS) start-up packages to be delivered upon request for selected new peacekeeping missions.

6. As part of their involvement in the United Nations Geographic Information Working Group (UNGIWG), UNITAR and UNOPS, through the UNOSAT service, are cooperating with other UN agencies using Very High Resolution (VHR) satellite imagery to provide an overview of which UN agency has purchased what VHR satellite imagery over which area. The database, hosted by UNOSAT, will be used to reduce duplication of efforts in purchasing VHR satellite scenes and improve co-ordination between the agencies working with such high-resolution data.

7. UNOPS is implementing a sustainable development study in Senegal and Mauritania on behalf of UNDP. UNOSAT will order and pre-process satellite imagery to be used by local institutes in combination with field collected data.

8. UNITAR and UNOPS, through UNOSAT, are developing local GIS expertise in the province of Matagalpa, Nicaragua. Working closely with local actors, UNOPS and the Canton of Geneva, Switzerland, are building up capacity to use satellite imagery and GIS techniques for sustainable development and planning to reduce the risks of natural disasters and enhance economic development in the region.

C. Enhancing education and training opportunities and ensuring public awareness of the importance of space activities

9. As part of UNITAR's International Training Centre for Local Actors (CIFAL) network, UNOPS is assisting the institute with the development and implementation of education and awareness-raising on the benefits of GIS technologies and use of satellite imagery for local development and decentralized co-operation activities. Most local communities in the developing world have little or no knowledge of these tools and can greatly benefit from CIFAL's training on applications of GIS and remote sensing imagery.

World Health Organization (WHO)

[Original Text: English]

1. The World Health Organization (WHO) has established different levels of collaboration, depending on the area of work, with countries and international institutions, including the United Nations and non-UN institutions, regarding the use of space-related technologies in health. These institutions include the United Nations Geographic Information Working Group (UNGIWG), the UN Information and Communication Technologies Task Force, the Joint UN Programme on HIV/AIDS (UNAIDS), United Nations Environment Programme (UNEP), Food and Agriculture Organization of the UN, United Nations Children's Fund (UNICEF), United Nations Office on Drugs and Crime (UNODC), the National Center for Health Statistics in the United States of America, the US Centers for Disease Control and Prevention (CDC) and Health Canada. In the future, WHO will expand this network in order to integrate new expertise and capacities located in

other research institutes, bilateral agencies, non-governmental organizations, etc. working at both the national and international levels.[1]

Using space application for human security, humanitarian assistance, development and welfare

2. WHO continues to develop user-friendly decision-support tools, software, customization of Geographic Information System (GIS) software and analytical routines, including spatial and epidemiological analysis, visualization and geostatistics, appropriate for public health professionals, programme managers and policy makers. This includes the mobile data collection tools, the HealthMapper, the *SIGEpi Software*™ and the Global Atlas on Infectious Diseases.

3. Recently, WHO's Regional Office for the Americas (AMRO) supported the establishment of the "*Inter-American Network on the use of GIS/Remote Sensing to Control Infectious Diseases*". This is a multilateral and multi-agency effort including, among others, the Oswaldo Cruz Foundation (FioCruz), Inter-American Institute for Global Change Research, US Department of State, the Ministry of Health in Brazil, Brazil National Institute of Meteorology, CDC, US National Institutes of Health, Brazilian Association of Public Health, Goddard Space Flight Center of the US National Aeronautics and Space Administration (NASA) and the US Geological Survey. The objective of this network is to support and promote the participation of the academic and research sector jointly with the operational public health services sector to use remote sensing and GIS in research and control of infectious diseases. In order to accomplish this objective, it is essential to ensure the participation of other UN agencies dealing with spatial and geocodified information, as well as those working with digital imagery.

4. WHO uses raster layers derived from satellite images (Landcover, Digital Elevation Models, population, road and river network) to measure accessibility to health care, as this is an important contributing factor to population health. The objective of this application is to develop Health Situation Analysis, based on a needs assessment, as well as to identify problems of regional coverage and accessibility to primary health care services (in Honduras). Future activities in this area will aim at improving the quality of some layers of reference (roads, delimitation of urban areas) through collaborations with academic institutions. Efforts will also be made on the improvement of existing methods used for designing catchment areas and measurement of travel time. This activity further underscores the importance of urban areas in the domain of public health (see document A/AC.105/792, para. 121) and the need for WHO to use satellite images in order to delimit these areas and provide, through the use of GIS, an analysis platform for this particular context.

5. As poverty influences the distribution of a large number of diseases, WHO is also working on the improvement of an approach that uses night time light images, other raster grids and survey data to extrapolate per capita income figures at the sub-national level (poverty mapping). This method is currently applied on the data collected in the context of the WHO World Health Survey (WHS).

Utilizing and facilitating information and communication technology for development

6. WHO is in the process of finalizing a draft tele-health strategy that includes the use of space technology in the provision of health services. In a similar effort, WHO's Collaborating Centre for Telemedicine in Tromso, Norway recently produced an authoritative report on the use of satellite technology to provide the communications link in tele-health services. WHO is collaborating

[1] More detailed information about the activities of the respective groups mentioned in this document can be found on their web sites:

- The Public Health Mapping Group (WHO Headquarters, Communicable Disease Surveillance & Response): http://www.who.int/csr/mapping/en/;

- The Evidence and Information for Policy/Geographic Information System (EIP/GIS) work group (WHO Headquarters, EIP): http://www3.who.int/whosis/gis;

- The Health Analysis and Information Systems Area (AIS), Pan American Health Organization (PAHO) http://ais.paho.org/.

closely with the International Telecommunication Union (ITU) in the area of tele-health in developing countries, including assessment of tele-health projects undertaken by the ITU. Collaboration with other agencies is planned, notably with the UN Committee on the Peaceful Uses of Outer Space in the area of tele-health using Very Small Aperture Terminals in rebuilding national health services after crises.

Using satellite positioning and location capabilities

7. WHO continues to work on the collection and mapping of communities, health care infrastructure, schools and water supplies. In this context, Global Positioning System (GPS) devices are the appropriate and indispensable tools for the collection of location coordinates of these geographical features.

8. The 2002 WHS used GPS devices in 26 countries, thus becomes the second largest undertaking ever in the collection of Geographic Information at the cluster level, after the Democratic and Health Surveys. The location of the clusters will be used to perform spatial analysis and apply sub-national models for the extrapolation of socio-economic variables.

Capacity-building and education in space application for sustainable development

9. WHO will continue to provide technical training on use of tools and data to strengthen the analytical and epidemiological capacity of health professionals, managers and decision-makers in countries (district and national levels). The objectives are to assist the countries in using public health data in combination with GIS (the HealthMapper, SIGEpi*)* for operational decision-making and to further develop material to support disease-specific analysis (Malaria, Tuberculosis).

10. During the last ten years, for example, WHO/AMRO has developed and supported a "*Regional Technical Cooperation Project on GIS applied to Public Health and Health Situation Analysis*" in the Americas by using GIS and remote sensing. This is done through different components, including the use and development of GIS applications, the development of training courses and materials, the provision of direct technical assistance to countries and AMRO technical units, the development of software, the promotion of multidisciplinary collaborating groups of excellence and networks in GIS, the dissemination of results and experiences and the promotion of multilateral collaboration and alliance.

11. The GPS devices used in the context of different WHO data collection exercises, such as the WHS, remain in the countries and can be used in new surveys or other data collection activities. These devices, combined with the technical assistance provided to the countries, should facilitate data collection and consolidate and improve the maintenance of baseline geo-referenced data, including the location of villages, health facilities, schools and water supplies.

Other activities

12. The Second Administrative Level Boundaries data set project (SALB) is the first attempt, proposed by the United Nations system, to take advantage of existing administrative boundaries data sets and to meet the general need for a consistent global coverage down to the second administrative level, within the context of the United Nations Geographic Database project and the UNGIWG. Coordinated by WHO, the SALB project has the active support of more than 50 UN and non-UN institutions, including committees such as the Permanent Committee on GIS Infrastructure for Asia and the Pacific and the International Steering Committee for Global Mapping. Further information can be obtained by accessing the following website: http://www3.who.int/whosis/gis/salb/salb_home.htm.

13. WHO has expressed a strong interest in evaluating the possibility of using the global mosaic, now available (Landsat 1995 and 2000) as a "ground reference" for the integration of the information collected at all levels (local, national, regional, global), in order to insure the compatibility of all these sources of information (field, digitized or sensed data). This possibility will be explored within the context of the UNGIWG.

World Meteorological Organization (WMO)

[Original Text: English]

1. WMO has major initiatives relevant to several action teams involved in recommendations from the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE III). In particular, WMO has become a co-leader of Action Team 4 on enhancing weather and climate forecasting through expanded international cooperation in the field of meteorological satellite applications. Since joining Action Team 4, WMO has helped in the development of a report to the Committee on the Peaceful Uses of Outer Space describing international cooperation.

2. A related initiative of WMO is the establishment of a new major programme, the WMO Space Programme, which was endorsed by the Fourteenth WMO Congress, held in May 2003 in Geneva. The main purpose of the Programme is to coordinate environmental satellite matters and activities throughout all of the existing WMO programmes and to give guidance to these and other multi-sponsored programmes on the potential of remote sensing techniques in meteorology, hydrology, related disciplines and their applications. Through this coordination and guidance, the Programme would make essential contributions with respect to the collection and exchange of satellite observations and by ensuring more effective work with those numerous international partners and relevant organizations that deal with satellite systems.

3. The long-term objectives of the WMO Space Programme are:

(a) To participate in the development of the Global Observing System (GOS) as a composite system comprised of surface and space-based components, with primary focus on matters related to research and development environmental satellites, as well as operational meteorological satellites;

(b) To assist members in the transition of low-resolution imagery satellite services from analogue to digital format, under different and complex operational conditions of each member;

(c) To promote high-quality satellite-related continuing education to keep the knowledge skill of members' operational and scientific staff up-to-date with the latest technological innovations and to provide the competence and skills needed in related fields, such as communication with users; and

(d) To provide information, advice and guidance to members on satellite-related technological developments, as well as on changes in relevant existing meteorological and hydrological operational systems, in order to enable them to develop plans for objectives and wise investments.

4. A second major initiative concerns the Integrated Global Observing Strategy (IGOS) Partnership. IGOS intends to unite the major satellite and ground-based systems for global environmental observations of the atmosphere, oceans and land, in a framework that delivers maximum benefit and effectiveness in their final use. Related to the third recommendation from UNISPACE III, to develop and implement the IGOS, WMO has continued its active role in furthering the development of IGOS, as reported to the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space, in February 2003. Through the mechanism of IGOS, WMO promotes the redesigning of GOS from an atmospheric observation basis to extensive fields, including ocean and land surface domains served by other observing systems, such as the Global Ocean Observing System (GOOS) and the Global Terrestrial Observing System (GTOS). WMO's participation within the Partnership includes its sponsorship role for GOOS, GTOS and the Global Climate Observing System (GCOS), as well as for the WMO unique observing systems GOS and the Global Atmosphere Watch (GAW).

5. A third major initiative concerns the new major WMO Programme on Natural Disaster Prevention and Mitigation, which was approved by the Fourteenth WMO Congress. It is related to the seventh recommendation of UNISPACE III, to implement an integrated, global system to manage natural disaster mitigation, relief and prevention efforts. WMO recognized the necessity to

launch the Programme, noting the change in the main focus of natural disaster activities, shifting from protection and recovery to prevention and management of risk. The aim of the Programme is to coordinate WMO actions to improve risk analyses at the national and regional levels, to improve mechanisms and communication for the delivery, use and evaluation of warnings and the provision of prompt advice and assistance to its members.