



Office for Outer Space Affairs
United Nations Office at Vienna



**United Nations/Austria/European Space Agency Symposium on
Space Applications to Support the Plan of Implementation of the
World Summit on Sustainable Development**

**SPACE SYSTEMS: PROTECTING AND RESTORING WATER
RESOURCES**

Graz, Austria, 13-16 September 2005

United Nations training opportunities in space applications

Shuhrat Sulaymanov

United Nations Office for Outer Space Affairs





United Nations Office for Outer Space Affairs

- × **Goals of the Office:**
 - × **To promote international cooperation in the use of space technology for sustainable economic and social development and for the protection and management of the Earth's environment**
 - × **To assist in the establishment of a legal and regulatory framework governing space activities**
 - × **To contribute to the implementation of the recommendations of United Nations global conferences (Rio de Janeiro, 1992; Yokohama, 1994; UNISPACE III, Vienna, July, 1999; World Summit on Sustainable Development, 2002)**
 - × **To strengthen the capacity of developing countries to use space technology**





United Nations Office for Outer Space Affairs (cont.)

- × **Organization of the Office for Outer Space Affairs:**
 - × Office of the Director
 - × Committee Services and Research Section (CSRS)
 - × Space Applications Section (SAS)

- × **Legislative bodies:**
 - × Committee on the Peaceful Uses of Outer Space
 - × Fourth Committee of the General Assembly (Special Political & Decolonization Committee)

- × **Staff of the Office for Outer Space Affairs**
 - × 20 staff, including lawyers, scientists and political scientists from the following countries: Australia, Azerbaijan, Brazil, Germany, Mexico, Nigeria, Oman, Philippines, Russian Federation, South Africa, Ukraine, United Kingdom, United States and Uzbekistan

 - × 2 Associate Experts (Italy and Korea)
 - × 1 Fulbright Scholar (Ecuador)
 - × 1 Volunteer (Japan)





United Nations Programme on Space Applications

Aim:

- **Promote, through international cooperation, the use of space technologies and data for sustainable economic and social development in developing countries**

Programme Objectives:

- **raising the awareness of decision makers of the cost-effectiveness and benefits to be obtained by using space technology;**
- **establishing or strengthening the capacity in developing countries to use space technology;**
- **strengthening outreach activities which disseminate awareness of the benefits of space technology.**





Programme on Space Applications

Priority Thematic Areas (A/RES/59/2)

- Space technology for disaster management
- Satellite communications for tele-education and telemedicine applications
- Monitoring and protection of the environment, including the prevention of infectious diseases
- Management of natural resources
- Education and capacity building, including research areas in basic space sciences
- Applications of Global Navigation Satellite Systems





Programme on Space Applications

Technical Assistance in the Use of Space Technologies

- x Continuing pilot projects as follow-up to workshops & training courses
- x Initiating pilot projects in thematic areas of priority interest
- x Providing technical advice to Member States and UN system on the use of space technologies





Programme on Space Applications

Enhancing Access to Space-related Information and Data

- Promoting the use of existing information systems
- Facilitating access to sources of data and information of UN system and relevant national/international organizations
- Implementing an outreach programme for young people, decision-makers, general public





Programme on Space Applications

Education and Training Support for Capacity Building

- Since 1971, the Programme has organized more than 170 training courses, workshops and conferences.
- Close to 8,000 people have participated in these activities – researchers, educators, decision makers and experts from developing countries.
- More than 250 specialists have participated in various long-term fellowship programmes.





Programme on Space Applications

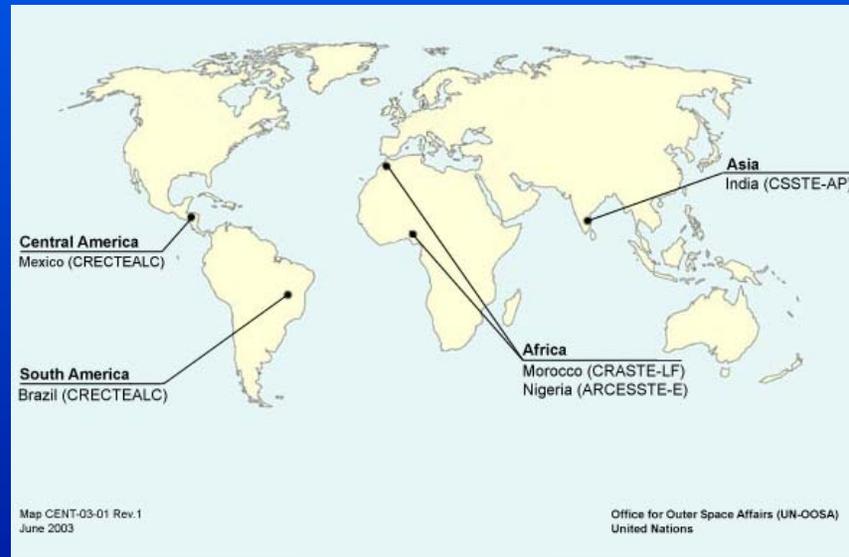
Education and Training Support for Capacity Building

- Regional Centres for Space Science and Technology Education, Affiliated to the United Nations
 - Asia and the Pacific (India)
 - Latin America and the Caribbean (Brazil, Mexico)
 - Africa (Nigeria, Morocco)
- × Workshops and training courses on advanced space applications in priority areas for Member States
- × Long-term fellowship programmes



Regional Centres for Space Science and Technology Education, Affiliated to the United Nations

Established in accordance with the United Nations General Assembly Resolution 45/72 of 11 December 1990 and 50/27 of 6 December 1995



The goal of the Centres is to develop, through in-depth education, an indigenous capability for research and applications in the core disciplines of Remote Sensing and Geographical Information Systems, Satellite Communications, Satellite Meteorology and Global Climate, Space and Atmospheric Sciences, as well as data management.



Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP)

- established in India in 1995
- located in Dehradun, India
- supported by staff of the Department of Space (DOS)
- has access to the facilities, infrastructure and expertise of the Indian Institute of Remote Sensing (IIRS), the Space Applications Centre and the Physical Research Laboratory (PRL)
- carried out 21 long-term postgraduate courses and 16 short term programmes benefiting more than 600 scholars from the region





African Centre for Space Science and Technology – in French Language (CRATE-LF)

- established in Morocco in 1998
- located at the Mohammadia School of Engineers in Rabat
- supported by the Royal Centre of Space Remote Sensing, Scientific Institute, Agronomic Institute and Veterinary Hassan II, National Institute of Telecommunications and Directorate of National Meteorology
- carried out 6 long-term postgraduate courses (80 scholars from 16 countries) and 10 short term programmes





African Centre for Space Science and Technology Education – in English Language (ARCSSTE – E)

- established in Nigeria in 1998
- located at Obafemi Awolowo University (OAU) campus, Ile-Ife
- supported by the Nigerian National Space Research and Development Agency (NASRDA) and the Regional Centre for Training in Aerospace Surveys (RECTAS)
- carried out 6 postgraduate courses (30 scholars from 9 countries) and 9 short term programmes





Regional Centre for Space Science and Technology Education for Latin America and the Caribbean – Brazil and Mexico campuses (CRECTEALC)

- established in Brazil and Mexico in 1997
- Brazil campus is supported by the National Institute for Space Research (INPE)
- Mexico campus is supported by the National Institute of Astronomy, Optics and Electronics
- Brazil campus carried out 2 postgraduate courses (25 scholars from 10 countries) and 4 short term programmes
- Mexico campus to start its first postgraduate programme during 2005



Long-term fellowship programme for in-depth training

- five 12-month fellowships for postgraduate study on GNSS and related applications
- offered by the Government of Italy through Politecnica di Torino and Istituto Superiore Mario Boella, with the collaboration of Istituto Elettrotecnico Nazionale Galileo Ferraris
- selection is administered by OOSA, with co-sponsoring organizations
- scholars from Argentina, the Islamic Republic of Iran, Jordan, Pakistan and Sri Lanka started the programme on 17 January 2005





Training opportunities provided by other United Nations entities

- ECA provides educational opportunities in information and communication technology and space technology
- ESCAP organizes regional workshops and seminars on space applications, and provides scholarships for training courses in China, India and Indonesia
- WMO provides fellowships for studies or training in meteorology, climatology and operational hydrology, including studies and training in satellite meteorology
- UNESCO holds space education sessions under its Space Education Project



Directory on Education, Research and Fellowship Opportunities in Space Science and Technology and its Applications

- compiled by OOSA since 1985, the latest was in 2001
- contains information on institutions providing any kind of space education
- contains areas of specialization of institutions, the educational and research programmes offered, the facilities available, the prerequisite qualifications, financial information, fellowship opportunities, opportunities for international cooperation, focal points
- can be downloaded at:
www.oosa.unvienna.org/SAP/eddir/EducationDirectory.pdf





Office for Outer Space Affairs
United Nations Office at Vienna



United Nations Office for Outer Space Affairs
Vienna International Centre

P.O. Box 500, A-1400 Vienna, Austria

Tel: (+43 1) 26060-4952 Fax: (+43 1) 26060-5830

Shuhrat.Sulaymanov@unvienna.org

www.unoosa.org

THANK YOU





Office for Outer Space Affairs
United Nations Office at Vienna





Programme on Space Applications

Space Technology and Disaster Management



International Charter Space and Major Disasters

- An International agreement among Space Agencies to support relief efforts in the event of emergencies caused by major disasters by providing space-based data and information





Programme on Space Applications

Space Technology and Disaster Management

As a Cooperating Body of the Charter, OOSA has enabled the UN system to use the Charter 10 times since August 2003.

- 13 September 2004 – Grenada – Hurricane Ivan
- 26 May 2004 – Haiti and Dominican Republic - Floods
- 23 April 2004 - North Korea - Train crash
- 7 April 2004 - Afghanistan - Earthquake
- 31 March 2004 - Namibia - Floods
- 24 February 2004 - Morocco - Earthquake
- 6 February 2004 - Indonesia - Earthquake
- 21 December 2003 - Philippines - Landslides
- 27 November 2003 - Dominican Republic - Floods
- 7 August 2003 - Nepal - Floods & landslides





Programme on Space Applications

Satellite-based Navigation and Positioning Technology

- Educate and promote satellite navigation and positioning applications
- Facilitate development of a self-sustaining mechanism for promoting regional co-operation on satellite navigation and positioning applications

Activities

- UN/USA Regional Workshops + International Expert Meetings
- Application oriented activities: agriculture, transportation, earth sciences
- Partnerships between governments and private sector
- Capacity Building (ad-hoc Action Teams, pilot projects, curricula development, web-based information dissemination, training courses through the UN-affiliated Regional Centres for Space Science and Technology Education)
- Co-ordination and integration with activities of UN agencies





Programme on Space Applications

Management of Natural Resources, Monitoring and Protection of the Environment

Workshops in 2004

- **Khartoum, Sudan - Natural Resources Management, Environmental Monitoring and Disaster Management**
- **Tehran, Iran - Environmental Security, Disaster Rehabilitation and Sustainable Development**
- **Islamabad, Pakistan - Monitoring and Protecting the Natural Environment**
- **Graz, Austria - Sustainable Development**
- **Kathmandu, Nepal - Remote Sensing for Sustainable Development in Mountain Areas**

Nine-month courses on remote sensing and GIS at the regional centres for space science and technology education, affiliated to the United Nations.

Long-term fellowship programmes

Follow-up activities





Programme on Space Applications

Satellite Communications Technology

Objectives

- Promote regional co-operation in applications such as *e-health*; *e-learning*, *disaster communications*.
- Promote technology transfer, exchange of information and experience.

Activities

- Pilot projects (Tele-consultancy, E-health)
- Partnership between governments and private sector
- Capacity Building:
 - **Training at the UN-affiliated Regional Centres and COSPAS-SARSAT Workshop series**
 - **Support OOSA-endorsed Asia-Pacific Satellite Communications Council**
- Coordination of related activities of UN agencies



Programme on Space Applications

Basic Space Sciences

UN/ESA Workshops on Basic Space Science 1991-2002 (observing variable stars and near-Earth objects)

Central America:
Honduras 1997

Europe:
France 2000

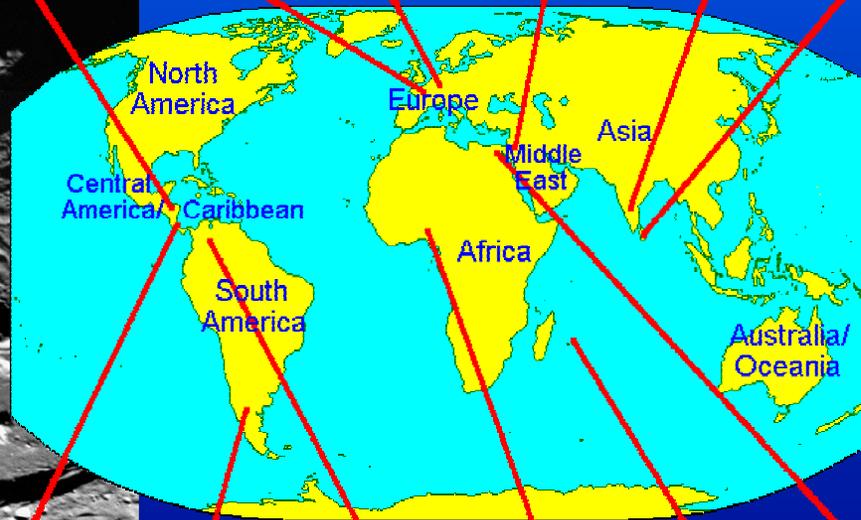
Europe:
Germany 1998

Western Asia:
Jordan 1999

Asia:
India 1991

Asia:
Sri Lanka 1995

- Government of Japan: Japanese Cultural Grant Aid - 45cm reflecting telescope;
- American Association of Variable Star Observers (AAVSO) - Hands-On Astrophysics;
- International Astronomical Union (IAU) - Astrophysics for University Physics Courses



Central America:
Costa Rica 1992

South America:
Argentina 2002

South America:
Colombia 1992

Africa:
Nigeria 1993

Africa:
Mauritius 2001

Western Asia:
Egypt 1994



Programme on Space Applications

World Space Week

- x Purpose - to celebrate the contribution that space science and technology can make to the betterment of the human condition
- x World wide event
- x 4 – 10 October annually
 - x 4 October is the date Sputnik-1, the first artificial satellite, was launched in 1957.
 - x 10 October is the date that the General Assembly adopted the Outer Space Treaty of 1967
- x Declared by the United Nations General Assembly in 1999
- x Coordinated by Spaceweek International Association, a non-government organization
- x Network of coordinators in 56 nations





Programme on Space Applications

World Space Week

WSW 2003 - Space: Horizon Beyond Earth

- x 41 nations reported participation
- x United Nations exhibition in Vienna

WSW 2004 - Space and Sustainable Development

- x United Nations school activity in Vienna
- x Visit www.spaceweek.org for information & materials

