

Regional Regional Centre for Space Science and Technology Education for Latin America and the Caribbean (CRECTEALC)

Activities in 2008 y and work planned for 2009 – report to COPUOS

Sergio Camacho-Lara
Fifty-second session of the Committe on the Peaceful Uses of Outer Space
5 June 2009, Vienna, Austria



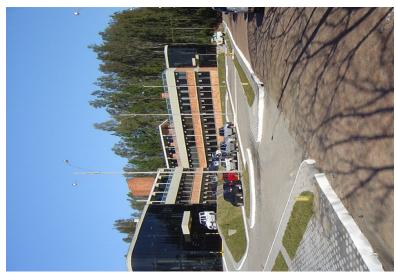
Background of the Regional Centres, affiliated to the United Nations

- Resolution 45/72 of the General Assembly of the UN, 1990: "UN should lead ... establishment of Regional Centres ..."
- Regional Centres established in:
 - Asia and the Pacific (India, 1995);
 - Latin America and the Caribbean (Brazil & Mexico 1997) -CRECTEALC;
 - French-speaking Africa (Morocco, 1998)
 - English-speaking Africa (Nigeria, 1998)
- CRECTEALC was afiliated to the United Nations in 2003



Regional Centre for Latin America and the Caribbean (CRECTEALC)

Campuses in Brazil and Mexico



Santa Maria, Brasil



Tonantzintla, Mexico



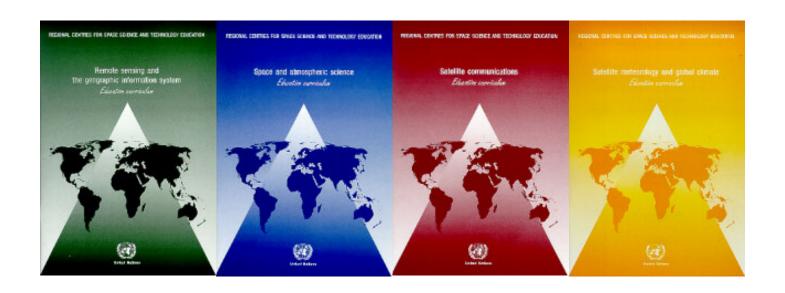
Mission of CRECTEALC

- Aim of the Centre: to provide high-level education and training that develop skills and scientific knowledge
- The Centre offers postgraduate programmes, workshops, short-term courses in the core disciplines:
 - Remote Sensing and Geographic Information System
 - Satellite Communications
 - Satellite Meteorology and Global Climate, and
 - Space and Atmospheric Sciences



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Long-term post-graduate education programmes



- RS&GIS, SATCOMM, SATMET, SPACE&ATMOS
- 9 and 12-month courses, including projects



- Education Programmes relate to: the environment, protection of biological diversity, climate change studies, health and education, weather forecasting, disaster management and the development of space science
- <u>Target beneficiaries</u>: professors, researchers, practitioners from public and private institutions and others professionals
- The campus in Brazil is supported by the National Institute for Space Research (INPE)
- Campus in Mexico is supported by the National Institute of Astrophysics, Optics and Electronics (INAOE)
- The languages of education of the Centre are Portuguese, Spanish and English.



- Since its establishment, CRECTEALC has conducted:
 - 10 nine- and twelve-month post-graduate courses on RS&GIS
 - 4 nine- and twelve-month courses in satellite communications
 - 2 nine- and twelve-month courses on satellite meteorology and global climate
 - Courses organized in partnership with INPE, INAOE, the National Council for Scientific and Technological Development (CNPq) of Brazil, the United Nations University and UN-OOSA
- 253 professionals from 12 countries have graduated from these courses
- More than 80% of them are still working in the areas of specialization in their countries.



- CRECTEALC has carried out 14 workshops, short courses, seminars – <u>Natural Disasters Series</u>
 - Geotecnologías Aplicadas a la Gestión y Prevención de Desastres Naturales: el Volcán de Tungurahua - Ecuador" – CLIRSEN (2007)
 - "La Geoinformación en la Gestión de Cuencas HidrográficasÑ
 Movimientos Gravitacionales de Ladera en Regiones Andinas" –
 CLIRSEN (2008)
 - "I Escuela de Primavera sobre Soluciones Espaciales para la Gestión de Desastres Naturales y Respuesta y a Emergencias – Inundaciones UN-SPIDER/GEO/CEOS WGEdu (2008)
 - Uso de la Información de SRTM y software con Licencia Pública General para la Determinación de Avenidas de inundación en Zonas Costeras



- First GNSS Course, in cooperation with ESA, INPE and UNISINOS
- Portal on the use of GNSS in agriculture
- CRECTEALC is the Coordinator of the LATINO Consortium,
 - Support the future Galileo user communities
 - Develop a Galileo portal (information related to Galileo)
 - Prepare educational material
 - Organize courses and seminars



Galileo Portal, operational in 2006

Courses and seminars

- Outreach seminars on Galileo, September 2006 and 2007, held during GIS Brazil, Sao Paulo
- Galileo Information Days, "Global Navigation Satellite Systems – Current and future prospects", March 2007, Brazil
- Summer School on Galileo, December 2007, Brazil
- Fall School on Galileo, October 2008, Mexico

Educational material

 Manual on Galileo, December 2007; to become a general manual on GNSS (English and Portuguese)



Future workshops:

- Meeting on Galileo Networking for Industry, Brazil, 2009
- Workshop/course on GNSS capabilities and use in research and applications, (OOSA) Mexico, 2009



- Preparation of GNSS curricula (in cooperation with other Regional Centres; effort led by OOSA)
- Participation in "International Training Course on Satellite Navigation and Location Based Services", CSSTEAP, Ahmedabad, India, 2008
- United Nations/Colombia/United States of America Workshop on the Applications of Global Navigation Satellite Systems, Medellin, Colombia, June, 2008
- Participation in "International Training Course on Satellite Navigation and Location Based Services", CRASTE, Rabat, Morocco (2009)



Proposal to ICG:

 CRECTEALC as Information Centre for the ICG for Latin America and the Caribbean

CRECTEALC Offers:

- Regional reach
- Education programmes in all space disciplines
- Support the development of educational material in Portuguese and Spanish
- Support for the development of a policy to create critical mass in the region



- Participation of CRECTEALC in ICG-3, Pasadena, USA:
 - CRECTEALC accepted as Information Centre for the ICG in Latin America and the Caribbean
 - Joins ICG WG C (Capacity building)
 - Developing a dedicated Web site



Outreach and policy-making activities of CRECTEALC

- Il Seminario de Difusión e Información: Actividades del Centro Regional de Enseñanza de Ciencia y Tecnología del Espacio para América Latina y el Caribe (2008, Mexico)
- Space Policy in Latin-America and the Caribbean: Looking to the Future (Nov. 2009, Mexico) – jointly with Secure World Foundation



- In 2009, CRECTEALC will:
 - Conduct Two long-term courses on remote sensing and GIS
 - Conduct Two long-term courses on satelite
 Communications
- Develop as Information Centre for the ICG in Latin America and the Caribbean
 - Joined ICG's WG C (Capacity building)
 - Developing a dedicated Web site
 - Preparing a GNSS curriculum (with OOSA)



- Current education model:
 - Courses → projects with R &D elements
- Complementary model:
- R&D projects → Educ, and capacity building
 - Infrasound and gravitacional waves in the mesopause
 - Nanosatellite constellation (Humanitarian and climate change applications)
 - Database of existing human resources and diverse capacities in space science and technology



THANK YOU

Secretariat

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