



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
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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 affiliated 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



Regional Centre for Latin America and the Caribbean (CRECTEALC)

Long-term post-graduate education programmes



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



Activities of CRECTEALC

- 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
- Target beneficiaries: 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.



Activities of CRECTEALC

- 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.



Activities of CRECTEALC

- CRECTEALC has carried out 14 workshops, short courses, seminars – Natural Disasters Series
 - Geotecnologías Aplicadas a la Gestión y Prevención de Desastres Naturales: el Volcán de Tungurahua - Ecuador” – CLIRSEN (2007)
 - “La Geoinformación en la Gestión de Cuencas Hidrográficas y 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



GNSS Activities of CRECTEALC

- 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



GNSS Activities of CRECTEALC

- 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)



GNSS Activities of CRECTEALC

Future workshops:

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



GNSS Activities of CRECTEALC

- 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)



GNSS Activities of CRECTEALC

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



GNSS Activities of CRECTEALC

- 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

- II 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



GNSS Activities of CRECTEALC

- In 2009, CRECTEALC will:
 - Conduct Two long-term courses on remote sensing and GIS
 - Conduct Two long-term courses on satellite 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)



GNSS Activities of CRECTEALC

- 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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