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
- Tonantzinla, 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
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**
  – Geotecno\l\g\ías Aplicadas a la Gestión y Prevención de Desastres Naturales: el Volcán de Tungurahua - Ecuador” – CLIRSEN (2007)
  – 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


• 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


• 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

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