



Office for Outer Space Affairs
United Nations Office at Vienna



Capacity Building in Space Science and Technology:

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

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United Nations Office for Outer Space Affairs

UN/Moldova/USA Workshop on the Applications of GNSS
Chisinau, Moldova
17-21 May 2010





UN-affiliated Regional Centres for Space Science and Technology Education : Mandate

The United Nations General Assembly, in its resolution 45/72 of 11 December 1990 endorsed the recommendation of the Committee on the Peaceful Uses of Outer Space that

"... the United Nations should lead, with the active support of its specialized agencies and other international organizations, an international effort to establish regional centres for space science and technology education in existing national/regional educational institutions in the developing countries. "





UN-affiliated Regional Centres for Space Science and Technology Education : Mandate

In 1995, the United Nations General Assembly further endorsed the regional centres initiative and in its resolution 50/27 of 6 December 1995, and recommended that

"... these centres be established on the basis of affiliation to the United Nations as early as possible and that such affiliation would provide the centres with the necessary recognition and would strengthen the possibilities of attracting donors and of establishing academic relationships with national and international space-related institutions."





UN-affiliated Regional Centres for Space Science and Technology Education: Objective

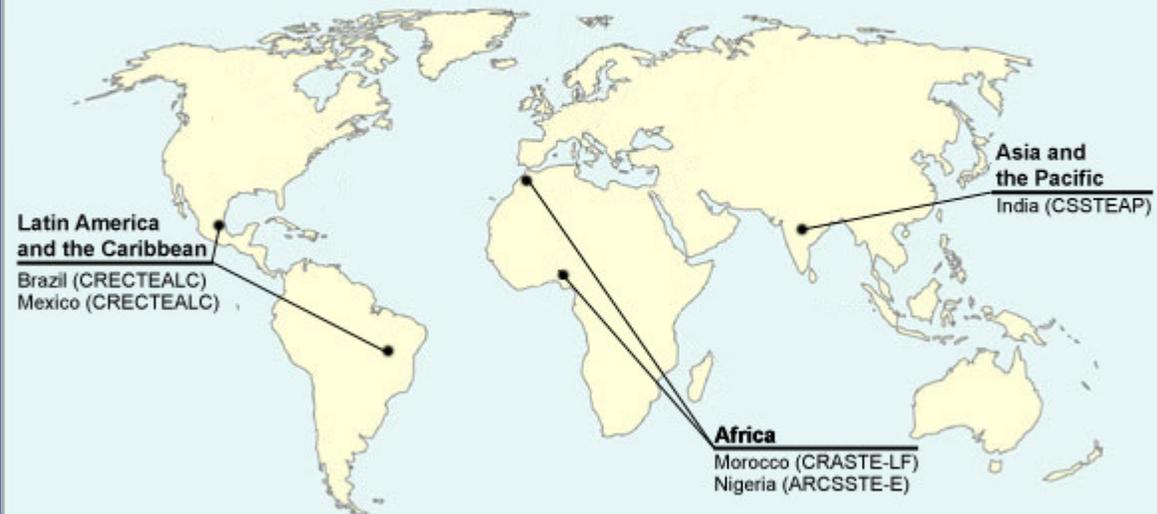
The goal of the Centres is to develop, through in-depth education, an indigenous capability for research and applications in the core disciplines:

- Remote Sensing and Geographical Information Systems,**
- Satellite Communications,**
- Satellite Meteorology and Global Climate, and**
- Space and Atmospheric Sciences as well as data management**





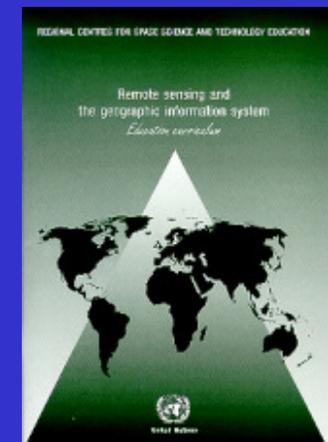
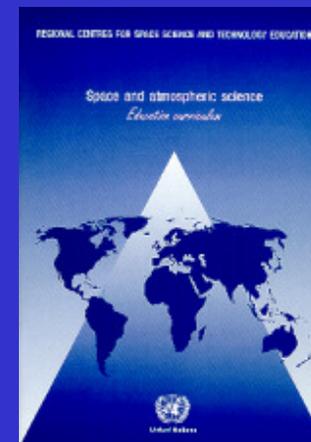
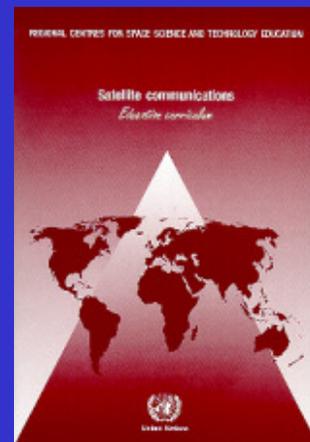
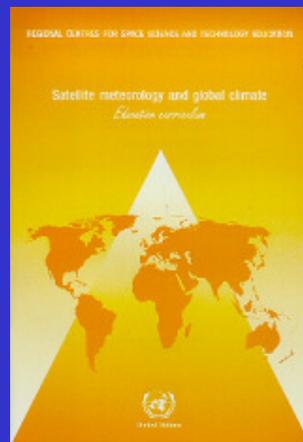
Regional Centres for Space Science and Technology Education (affiliated to the United Nations)





UN-affiliated Regional Centres for Space Science and Technology Education : Education curricula

Postgraduate courses provided by the Centres are based on education curricula developed through UN expert meetings, with the support of prominent educators, in 1989, 1995, and 2001 for each topic of the core disciplines



Two further model curricula are currently being developed:

- Global Navigation Satellite Systems
- Space Law



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

Ten countries signed the Agreement for the establishment of the Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP) during a meeting held on 1 November 1995 at New Delhi.

The affiliation agreement of the Centre to the United Nations (UN) was signed in 17 May 1996.

15 Member Countries.



**CSSTEAP Hqs,
Dehradun, India**



Centre for Space Science and Technology Education in Asia and the Pacific : CSSTEAP Course Record

- ◆ **The Centre has conducted 31 nine-month Post-graduate courses (1995~2009):**
 - ◆ **13 courses in RS and GIS**
 - ◆ **6 courses in SATCOM**
 - ◆ **6 courses in SATMET**
 - ◆ **6 courses in Space Science**
- ◆ **These programs have benefited 519 participants from 27 countries in the Asia-Pacific region.**
- ◆ **The Centre has also conducted 20 short-term courses/workshops and awareness programmes that had benefited 342 participants.**





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The Regional African Centre for Space Science and Technology Education in French Language : CRASTE-LF

The Regional African Centre for Space Science and Technology Education in French Language (CRASTE-LF) was created in Rabat, Morocco on 23 October 1998. The affiliation to the UN took place on 26 November 2003.

13 Member Countries.



CRASTE-LF
Rabat, Morocco



The Regional African Centre for Space Science and Technology Education in French Language : CRASTE-LF Course Record

- ◆ **The Centre has conducted 12 nine-month Post-graduate courses:**
 - ◆ **6 courses in RS and GIS**
 - ◆ **3 courses in SATCOM**
 - ◆ **3 courses in SATMET**

- ◆ **The long-term programmes have benefited about 150 participants from 17 countries in the African region.**

- ◆ **The Centre has also conducted 12 workshops and training courses. The training course on GNSS was held in 2009 by UN/ICG.**





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The African Regional Centre for Space Science and Technology Education - in English: ARCESSTE-E

The African Regional Centre for Space Science and Technology Education - in English (ARCESSTE-E) was inaugurated in Lagos, Nigeria in 24 November 1998. In 26 November 2003 the Centre became affiliated to the UN.

14 member countries.



ARCSSTE-E, OAU CAMPUS, ILE-IFE

ARCESSTE-E at the Obafemi Awolowo University in Ile-Ife, Nigeria





The African Regional Centre for Space Science and Technology Education - in English: ARCESSTE-E Course Record

- ◆ **The Centre has conducted 14 nine-month Post-graduate courses:**
 - ◆ **6 courses in RS and GIS (since 1999)**
 - ◆ **5 courses in SATCOM (since 2000)**
 - ◆ **2 courses in SATMET (since 2001)**
 - ◆ **1 course in Space Science (since 2005)**

- ◆ **These courses have benefited about 120 participants from 15 countries in the African region.**

- ◆ **The Centre has also conducted about 10 short-term courses/ workshops and seminars.**
- ◆ **The training course on GNSS will be held in 2010 by UN/ICG**





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The Regional Centre for Space Science and Technology Education in Latin American and the Caribbean: CRECTEALC

The Regional Centre for Space Science and Technology Education in Latin American and the Caribbean (CRECTEALC) was created on 19 March 1997. On 11 June 2003 the CENTRE became affiliated to the United Nations.

2 Member Countries



Campus in Mexico



Campus in Brazil



The Regional Centre for Space Science and Technology Education in Latin American and the Caribbean: CRECTEALC Course Record

- ◆ **The Centre has conducted 20 nine-month Post-graduate courses (~2009):**
 - ◆ 12 courses in RS and GIS
 - ◆ 6 courses in SATCOM
 - ◆ 2 courses in SATMET

- ◆ **The long-term programmes have benefited 253 participants from 12 countries (~2008).**

- ◆ **The Centre has also carried out 14 workshops, short courses, seminars and become the ICG Information Center.**





Galileo INFORMATION CENTER FOR LATIN AMERICA

- GNSS Activities in CRECTEALC

- Galileo Portal, operational in 2006

- <http://www.galileoic.org/>

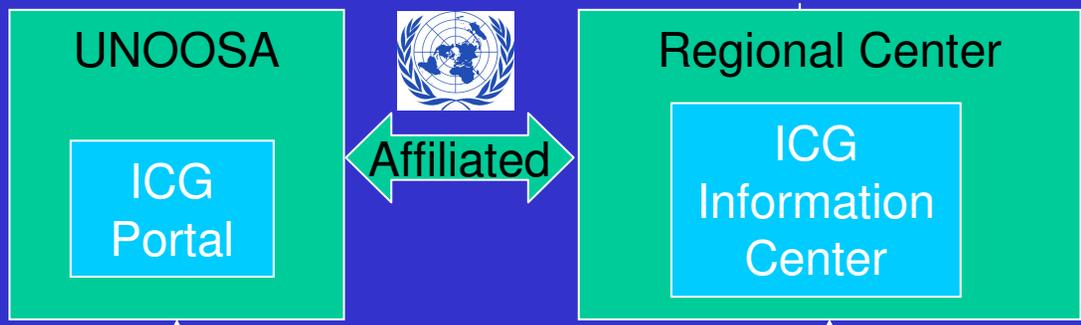
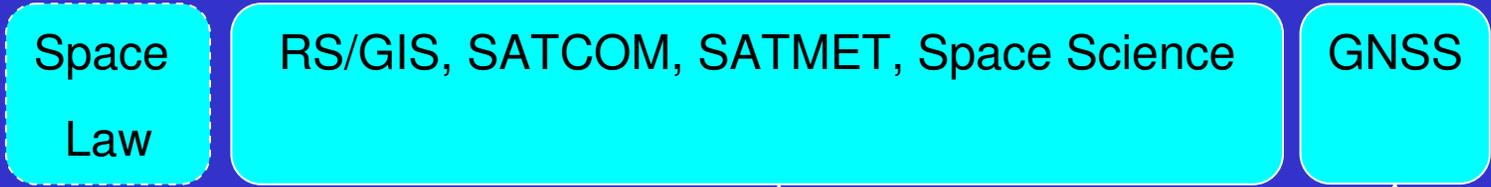
- **Courses and seminars**

- 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)





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ICG Information Centres - Objectives

➤ **Promote the GNSS Services & applications**

- **Disseminate the information on GNSS technology & ICG activities**
- **Conduct outreach/educational activities for GNSS technology**
- **Provide short time GNSS course**

CHALLENGES:

- **Establishment of new partnerships**
- **Maintaining effective communication between the actors**
- **Continuous support for sustainability**





CONCLUSIONS

- **4 (+1) UN-Affiliated Regional Education Centres**
 - **Open/Service to all nations (international)**
 - **Teaching in 4 (+ 2) disciplines (>10 years experience)**
 - **9 month graduate course (possibility of Master/PhD)**
 - **Workshops, seminars, short courses, training activities**
 - **Scholarships available**
- **New developments**
 - **GNSS + Space Law curricula**
 - **ICG Information Centres**
- **To follow the activities**
 - **UNOOSA Website: www.unoosa.org**





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THANK YOU

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