



**Office for Outer Space Affairs**  
United Nations Office at Vienna



# **UN Office for Outer Space Affairs:**

## **UN-affiliated Regional Centres for Space Science and Technology Education**

**United Nations/China/European Space Agency Training Course on  
the Use and Applications of GNSS**

Beijing, China  
*4 - 8 December 2006*





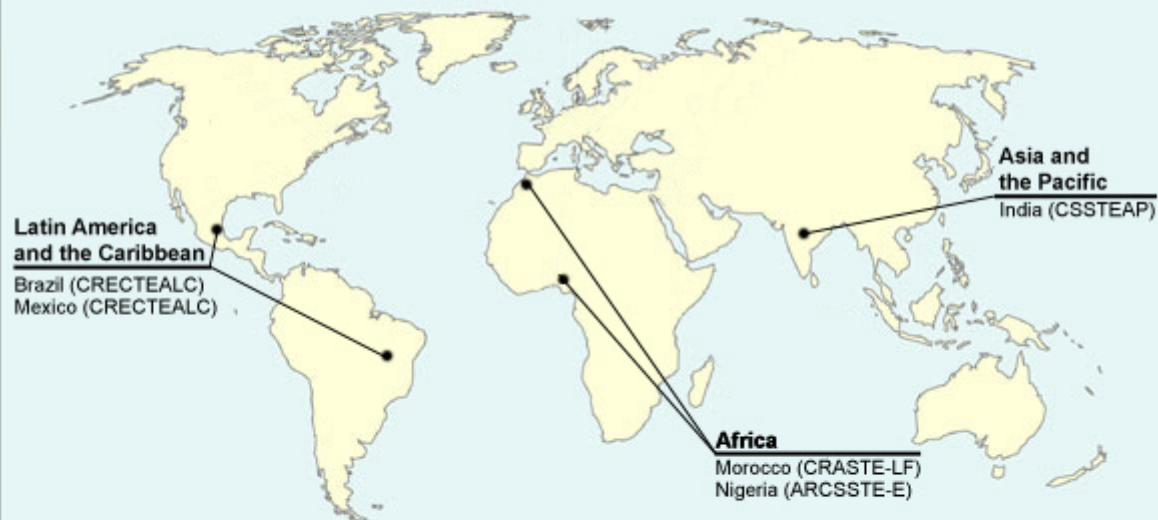
## Regional Centres for Space Science and Technology Education affiliated to the United Nations

- ◆ **The Regional Centres for Space Science and Technology Education were created under the auspices of the United Nations through its Office for Outer Space Affairs (UNOOSA)**
- ◆ **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, and Space and Atmospheric Sciences as well as data management.**
- ◆ **Regional Centres located in:**
  - ◆ **African region: CRASTE-LF (Morocco), CSSTE-E (Nigeria)**
  - ◆ **Asia and Pacific region: CSSTEAP (India)**
  - ◆ **Latin America and the Caribbean: CRECTEALC (Brazil and Mexico)**





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

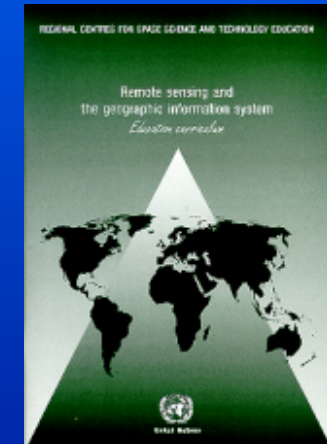
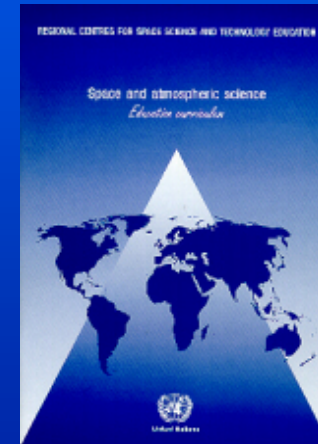
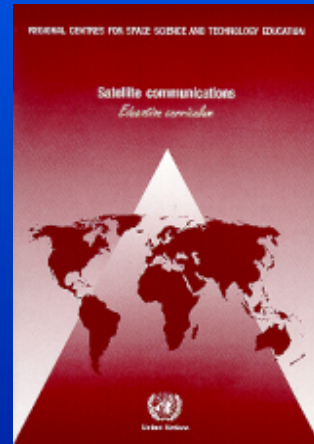
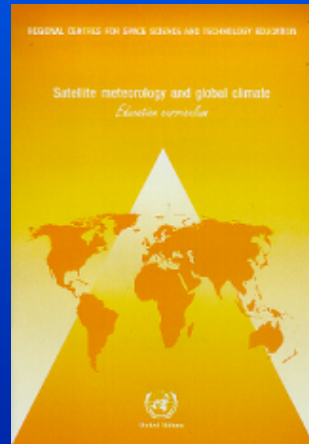






## Education curricula

- ◆ The United Nations Programme on Space Applications, with the support of prominent educators, developed a set of standard curricula to be adopted by the centres for each topic of the core disciplines





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

- **CSSTEAP is located at Dehradun on the campus of the Indian Institute of Remote Sensing (IIRS). The Centre also has two operational offices at Ahmedabad on the campus of Space Applications Centre (SAC) and at Physical Research Laboratory (PRL)**



**CSSTEAP Hqs, Dehra Dun**



**IIRS, Dehradun**



**SAC, Ahmedabad**



**PRL, Ahmedabad**





## CSSTEAP Linkages

### India:

- ◆ **DOS/ISRO Host Institutions & other institutions**
- ◆ **Andhra University – Recognition of PGD curricula to meet course-work requirement of Mtech**
- ◆ **GOI Organisations for international student travel support**
- ◆ **Academic Linkage with Universities/Institutes for Guest Faculty**

### International:

- ◆ **UN Agencies including UNOOSA, UNESCO, UNDP, WMO – fellowships / travel support/ sponsor short courses**
- ◆ **International Centres (ICIMOD, TWAS, GDTA\*) – Student sponsorship/ exchange**
- ◆ **Universities / Institutes: Guest Faculty (US,UK,Europe...)**







## CSSTEAP Post-graduate student statistics

Year	Courses				Participants from:
	RS & GIS	SATCOM	SATMET	Space Sci	
1996-97	25 students 14 countries				Afghanistan Azerbaijan Bangladesh Bhutan Cambodia China DPR Korea Fiji India Indonesia Iran Japan Korea Kazakhstan Kyrgyzstan
1997-98	23 students 14 countries	13 students 9 countries			Lao PDR Malaysia Maldives Mongolia Myanmar Nepal Pakistan Papua N.G Philippines Sri Lanka Thailand Tajikistan Taiwan Uzbekistan Vietnam
1998-99	21 students 11 countries		17 students 10 countries	10 students 7 countries	
1999-2000	17 students 11 countries	18 students 8 countries			
2000-2001	19 students 13 countries		21 students 13 countries	9 students 5 countries	
2001-2002	20 students 13 countries	14 students 8 countries			
2002-2003	23 students 13 countries		19 students 13 countries	11 students 3 countries	
2003-2004	21 students 16 countries	15 students 7 countries			
2004-2005	20 students 11 countries		15 students 10 countries	9 students 5 countries	
2005-2006	19 students* 13 countries	12 students* 6 countries			





## CSSTEAP Course record

- ◆ **The Centre has conducted 23 nine-month Post-graduate courses:**
  - ◆ 10 courses in RS and GIS
  - ◆ 5 courses in SATCOM
  - ◆ 4 courses in SATMET
  - ◆ 4 courses in Space Science
- ◆ **The Centre has also conducted 16 short-term courses/ workshops and awareness programmes**
- ◆ **These programs have benefited 596 participants from 30 countries in the Asia-Pacific region (360 in long-term courses and 236 in short-term courses & workshops)**
- ◆ **In addition, 26 participants from 16 countries outside Asia-Pacific region have been trained at CSSTEAP**







## CSSTEAP web-site

Centre for Space Science and Technology Education in Asia and The Pacific (CSSTEAP) - (Affiliat - Microsoft Internet Explorer p

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Browse <http://www.cssteap.org/> Go Address Links

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**CSSTEAP**  
Affiliated to UN  
March 23, 2005

- Introduction
- Courses
- Administrative Body
- Publications
- Pilot Projects
- International Linkages

### CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION IN ASIA AND THE PACIFIC (CSSTEAP)

(Affiliated to The United Nations)

**LATEST NEWS**

Memoirs RS&GIS  
8th PG Course  
in RS&GIS

**IIRS**

**SAC**

**PRL**

On a mission of capacity building in Space Science and Technology in Asia-Pacific region under the United Nations initiative.

The Centre is an Education and Research Institution that is capable of high attainments in the development and transmission of knowledge in the fields of Space Science and Technology. The initial emphasis of the Centre has been on in-depth education, research and applications programmes, linking to the global programmes/databases, execution of pilot projects, continuing education, awareness and appraisal programmes.

The Centre offers Post Graduate Level Courses in the fields of:

- Remote Sensing and Geographic Information System,
- Satellite Communications,
- Satellite Meteorology and Global Climate,
- Space and Atmospheric Sciences.

A set of standard curricula developed by the United Nations is adapted for the educational programme...

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CSSTEAP homepage:  
<http://www.cssteap.org/>



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## African Centre for Space Science and Technology - in French Language (CRASTE-LF)

- ◆ **CRASTE-LF is located at the L'Ecole Mohammadia D'Ingenieurs in Rabat, Morocco.**





## **CRASTE-LF Course record**

- ◆ **The Centre has conducted 8 nine-month Post-graduate courses:**
  - ◆ 4 courses in RS and GIS
  - ◆ 2 courses in SATCOM
  - ◆ 2 courses in SATMET
- ◆ **The Centre has also conducted 10 workshops**
- ◆ **These long-term programmes have benefited 80 participants from 16 countries in the African region**







## CRASTE-LF web-site

United Nations Programme on Space Applications: Regional Centres - Microsoft Internet Explorer provided by UNOV-ITS

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Browse http://www.ooosa.unvienna.org/SAP/centres/morocco/index.html

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**CENTRE REGIONAL AFRICAIN DES SCIENCES ET TECHNOLOGIES DE L'ESPACE EN LANGUE FRANÇAISE - C..R..A..S..T.E.. - L..F..**

**Bilans des sessions de formation post-graduée**

- [Bilan de la 1<sup>ère</sup> session de Formation Post-Graduée en Télédétection et Systèmes d'Information Géographique, Avril 2000 – février 2001](#)
- [Bilan de la 2<sup>ème</sup> Session de Formation Post-Graduée en Télédétection et Systèmes d'Information Géographique, Décembre 2001 – juillet 2002](#)
- [Bilan de la 1<sup>ère</sup> Session de Formation Post-Graduée en Météorologie Spatiale et Climat Global Février 2002 – octobre 2002](#)
- [Bilan de la 1<sup>ère</sup> Session de Formation Post-Graduée en Télécommunications Spatiales, novembre 2000 – juillet 2001](#)
- [Bilan de la 2<sup>ème</sup> Session de Formation Post-Graduée en Télécommunications Spatiales 2002-2003](#)

**Ateliers d'ouvertures de session de formation**

- [Atelier d'Ouverture de la 2<sup>ème</sup> Session de Formation Post-Graduée en Télédétection et Système d'Information Géographique \(Rabat, les 3 et 4 décembre 2001\)](#)
- [Atelier d'Ouverture de la 2<sup>ème</sup> Session de Formation Post-Graduée en Télécommunications Spatiales \(Rabat le 25 novembre 2002\)](#)

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CRASTE-LF homepage:

<http://www.unoosa.org/ooosa/SAP/centres/morocco/index.html>



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## African Regional Centre for Space Science and Technology Education - in English Language (CSSTE-E)

- ◆ **CSSTE-E is located at the Obafemi Awolowo University in Ile-Ife, Nigeria.**



**ARCSTE-E, OAU CAMPUS, ILE-IFE**





## CSSTE-E Course record

- ◆ **The Centre has conducted 7 nine-month Post-graduate courses:**
  - ◆ 2 courses in RS and GIS (since 1999)
  - ◆ 2 courses in SATCOM (since 2000)
  - ◆ 2 courses in SATMET (since 2001)
  - ◆ 1 course in Space Science (since 2005)
- ◆ **The Centre has also conducted 8 short-term courses/ workshops and seminars**
- ◆ **These programs have benefited 30 participants from 9 countries in the African region.**







## CSSTE-E web-site


ARCSSTE-E Home Page - Microsoft Internet Explorer provided by UNOV-ITS

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 **AFRICAN REGIONAL CENTRE FOR SPACE SCIENCE AND TECHNOLOGY EDUCATION**  
- ENGLISH

Obafemi Awolowo University Campus,  
Ile - Ife, Nigeria.

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*Notice: The downloadable forms and Online Registration for the Postgraduate Course In Satellite Technology and Application are now available for the 2004/2005 Admissions.*

**BACKGROUND INFORMATION**

The second United Nations Conference on the Exploration and Peaceful Uses of Outer Space (UNISPACE '82) held in Vienna, Austria; recommended that the United Nations Programme on Space Applications should focus its attention, inter alia, on the development of indigenous capabilities in space science and technology at the local level. The United Nations General Assembly (GA) endorsed that recommendation in its resolution 37/90 of 10<sup>th</sup> December 1982.

The GA in its resolution 45/72 of 11<sup>th</sup> December, 1990 also endorsed the recommendation of its Committee on the Peaceful Uses of Outer Space (COUPOS) 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 (A/AC. 105/456, annex II, para 4 {4}). This endorsement of the GA was in recognition that an essential pre-requisite to successful space technology application was the building of indigenous capabilities, particularly human resources, within each region. In particular, the endorsement recognized that if effective administrative and appropriate applications of space technology were to succeed in the developing countries, efforts must be devoted at the local

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ARCSSTE-E homepage:  
<http://www.arcsstee.org/>



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

- ◆ The Brazil campus of CRECTEALC is located in São José dos Campos, São Paulo. It is hosted by the National Institute of Space Research (INPE).





## CRECTEALC Administration

### CAMPI:

- ◆ The Campi are responsible for the planning, the organization, the implementation and the administration of education programmes in the areas concerning the competence of the Centre.
- ◆ There are two campus located in:
  - ◆ **Brazil**
    - ◆ Host institution: National Space Research Institute – INPE  
São José dos Campos, São Paulo, Brazil
  - ◆ **Mexico**
    - ◆ Host institution: National Institute for Astrophysics, Optics and Electronics – INAOE Tonantzintla, Puebla, Mexico







## CRECTEALC Support

- ◆ **Foreign Relations Ministry of Brazil – MRE**
- ◆ **Foreign Relations Secretary of Mexico – SRE**
- ◆ **Brazilian Space Agency – AEB**
- ◆ **National Institute for Space Research – INPE/MCT**
- ◆ **National Institute of Astrophysics, Optics and Electronics – INAOE**
- ◆ **National Council for Science and Technology – CONACYT**
- ◆ **National Council for Scientific and Technological Development – CNPq/MCT**
- ◆ **University of the United Nations – UNU**
- ◆ **United Nations Office of Outer Space Affairs – UN OOSA**
- ◆ **Organization of the American States – OAS**





## CRECTEALC International Course on RS&GIS

- ◆ **From 1985 to 2002, the 7-month Course was promoted under the responsibility of the National Institute for Space Research - INPE of the Ministry of Science and Technology-MCT of Brazil.**
- ◆ **From 2003 to 2005, 36 students have graduated from this course under the coordination of the CRECTEALC/Campus Brazil. This year, 7 students should graduate and the total will reach 43 students.**
- ◆ **Up to December 2006 the Course will form 189 specialists from Algeria, Argentine, Bolivia, Brazil, Burkina Faso, Chile, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, Ethiopia, Ghana, Honduras, Kenya, Mexico, Panama, Paraguay, Peru, Nigeria, Senegal, Uruguay and Venezuela.**





## **CRECTEALC 9-month post-graduate course in RS & GIS**

- ◆ **CRECTEALC (Campus Brazil) has conducted 2 nine-month Post-graduate courses: in RS & GIS.**
  - ◆ 25 students from 10 countries from the region participated.
- ◆ **The CRECTEALC (Campus Brazil) has also promoted 4 workshops on RS & GIS.**
- ◆ **THE CRECTEALC (Campus Mexico) is organizing its first post graduate course in RS & GIS to be carried out at the premises of the National Institute of Optical and Electronic Astrophysics in Tonantzintla, Puebla, Mexico, where the Center is headquartered.**







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## CRECTEALC web-site



CRECTEALC homepage:

<http://www.inpe.br/unidades/cep/atividadescep/crectevalc>



## General Assembly resolution 60/99

### **In 2005, the UN GA, in its resolution 60/99**

*“Notes with satisfaction that, ..., the African regional centres ... , in the French language and in the English language, located in Morocco and Nigeria, respectively, as well as the regional centre ... in Asia and the Pacific and the regional centre ... for Latin America and the Caribbean, entered into an affiliation agreement with the Office ... of the Secretariat and have continued their education Programmes in 2005; “*

*“Agrees that the regional centres referred to in [the] paragraph Above should continue to report to the Committee on their activities on an annual basis;*

*Notes with satisfaction that the centre ... in Asia and the Pacific celebrated its tenth anniversary in 2005.”*



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**THANK YOU**

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