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

Affiliated to the United Nations

Presentation at the COPUOS  June, 2009

DR. GEORGE JOSEPH
DIRECTOR, CSSTEAP

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Web : www.cssteap.org
CENTRE FOR SPACE SCIENCE & TECHNOLOGY EDUCATION IN ASIA AND THE PACIFIC (CSSTEAP)  
(Affiliated to the United Nations)

Nov 1, 1995 – 10 Countries sign agreement to establish CSSTEAP
May 7, 1996 – Cooperation Agreement with UN
Mar 10, 1998 – Host Country Agreement (Sec. DOS, GOI)

DPR Korea (1996)  
India  
Indonesia  
Kazakhstan  
Kyrgyzstan  
Malaysia (1996)  
Mongolia  
Myanmar (1999)  
Nauru  
Nepal  
Philippines (1998)  
Republic of Korea  
Sri Lanka  
Thailand (2005)  
Uzbekistan
CSSTEAP : Headquarters & Campuses

- HEADQUARTERS:
- INDIAN INSTITUTE OF REMOTE SENSING,
  DEHRADUN
-(ALSO CONDUCTS RS&GIS COURSE)

OTHER CAMPUSES

SPACE APPLICATIONS CENTRE
AHMEDABAD
(FOR SATMET & SATCOM)

PHYSICAL RESEARCH LABORATORY
AHMEDABAD
(FOR SPACE SCIENCE)
CSSTEAP: Organizational Structure

- Host Country
- Coordination Committee
- CSSTEAP
- Advisory Committee
- Governing Board
- Board of Studies
- COURSE DIRECTOR
  IIRS-NRSC
  Dehradun
  RS & GIS
- COURSE DIRECTORS
  SAC
  Ahmedabad
  SATCOM & SATMET
- COURSE DIRECTOR
  PRL
  Ahmedabad
  Space & Atmosph Science
GOVERNING BOARD

GB FORMULATES POLICIES OF CSSTEAP ONE EACH FROM MEMBER COUNTRIES UN-OOSA & ITC OBSERVERS DIRECTOR – SECRETARY HELD EVERY YEAR SINCE 1995 (Except 1998)


Participation of GB Member Countries in the GB Meetings

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>95</td>
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<td>11 (15)</td>
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<td>08</td>
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</tbody>
</table>

( ) Total no. of Members

GB, 2008 Ahmedabad
ADVISORY COMMITTEE

• AC is technical arm of GB, an independent body of experts, for
  – Guiding the technical programme of CSSTEAP
  – Evaluating the courses & Advise CSSTEAP in setting technical facilities
  – Chaired by UNOOSA

• 10th AC-2008: November 24, 2008, Ahmedabad

AC, 2008 Ahmedabad
## Linkages

### India
- **DOS / ISRO**  
  Host Institutions
  - Academic Institutions - IITs, Nirma University, etc for Guest Faculty
  - Andhra University - Recognition of PGD curricula to meet course-work requirement of M.Tech
- **GOI Organizations** - for international student travel support

### International
- **UN Agencies** - including UNOOSA, UNESCO, UNDP, WMO - fellowships / travel support
- **ITC, Netherlands** - Academic & faculty support; Recognized RS&GIS PG Diploma for partial credits of M.Tech Programme
- **International Centers** - (ICIMOD, TWAS, GDTA*) – Student sponsorship/ exchange
- **Universities / Institutes:** Guest Faculty (US, UK, EUROPE, JAPAN...)
In addition to PG courses, CSSTEAP also conducts short term courses & workshops in specific areas of RS & GIS, SATCOM, SATMET & Space Science.
Common Curricula under UNOOSA aegis

Regional Centres for Space Science and Technology Education

Remote sensing and the geographic information system

Education curriculum

September 2001, Frascati, Italy

Regional Centres for Space Science and Technology Education

Satellite communications

Education curriculum

Regional Centres for Space Science and Technology Education

Satellite meteorology and global climate

Education curriculum

Regional Centres for Space Science and Technology Education

Space and atmospheric science

Education curriculum

Board of studies inputs
INTRODUCED COMMON MODULE

A. SPACE SCIENCE & METEOROLOGY

THE UNIVERSE; IONOSPHERE; SOLAR ACTIVITY; EARTH’S ATMOSPHERE; METEOROLOGICAL SATELLITE APPLICATIONS; GLOBAL CLIMATE & CLIMATE CHANGE

B. SATELLITE COMMUNICATIONS

EVOLUTION OF COMMUNICATION SATELLITES; ELEMENTS OF SATELLITE COMMUNICATIONS SYSTEMS; SATELLITE COMMUNICATIONS LINK & ATTENTION EFFECTS; INTERNATIONAL REGULATIONS; APPLICATIONS AND TRENDS IN SATELLITE COMMUNICATIONS

C. REMOTE SENSING & GIS

BASIC PRINCIPLES OF REMOTE SENSING; DATA RECEPTION & DATA PRODUCTS; GEOGRAPHIC INFORMATION SYSTEM; APPLICATIONS OF REMOTE SENSING

D. SPACE LAW

FORMULATION OF UN SPACE TREATIES FORUM; UN PRINCIPLES ON OUTER SPACE ACTIVITIES; UNCOUPOS – STRUCTURE; MAJOR ISSUES RELATING TO OUTER SPACE ACTIVITIES
The Centre has so far conducted **THIRTY** PG courses

- 12 courses in RS & GIS
- 6 courses in SATCOM
- 6 courses in SATMET
- 6 courses in SPACE SCIENCE

The Centre conducted 21 short courses/Workshops in the last 13 yr

These programmes have benefited 862 participants from 47 countries. (520 from PG courses & 342 from short courses)

*This includes 27 participants from 17 countries from outside AP region in different courses*
<table>
<thead>
<tr>
<th>Year</th>
<th>RS &amp; GIS</th>
<th>SATCOM</th>
<th>SATMET</th>
<th>SPACE SC.</th>
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<td>1996</td>
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<td>2007 - 08</td>
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<td>2008 - 09</td>
<td>15 (10)</td>
<td></td>
<td>16 (13)</td>
<td>07 (03)</td>
</tr>
</tbody>
</table>

Total: 263 (23) 92 (16) 106 (20) 59 (13)

( ) Gives no. of Countries benefited

( Total 27 Countries)

COUNTRIES BENEFITED:
- Azerbaijan
- Bangladesh
- Bhutan
- Cambodia
- China
- DPR Korea
- Fiji
- India
- Indonesia
- Iran
- Korea
- Kazakhstan
- Kyrgyzstan
- Lao PDR
- Malaysia
- Maldives
- Mongolia
- Myanmar
- Nepal
- Pakistan
- Papua N.G.
- Philippines
- Sri Lanka
- Thailand
- Tajikistan
- Uzbekistan
- Vietnam
### OVERALL COUNTRYWISE OUTPUT OF M.TECH AWARDED

<table>
<thead>
<tr>
<th>Country</th>
<th>RS/GIS</th>
<th>SATCOM</th>
<th>SATMET</th>
<th>SPACE SC.</th>
<th>Total</th>
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<td>Vietnam</td>
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<td><strong>Total</strong></td>
<td>51</td>
<td>20</td>
<td>13</td>
<td>10</td>
<td>94</td>
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</table>

#### M.TECH IN PROGRESS (58)
- **RS & GIS**: 9
- **SATCOM**: 23
- **SATMET**: 14
- **Sp. Sc.**: 12

#### M.TECH AWARDED (94)
- **RS & GIS**: 10
- **SATCOM**: 51
- **SATMET**: 13
- **Sp. Sc.**: 20
Short Courses /workshops

RS&GIS

SATCOM: –
Digital signal processing (DSP). Applications of satcom for societal development. Satellite navigation & location based services

SATMET
Emerging trends in satellite meteorology. Applications of MW RS

SPACE SCIENCE
satellite x-ray data processing

SHORT COURSES (342)

- RS & GIS: 211
- SATCOM: 78
- SATMET: 28
- Sp. Sc.: 25
### ASIA

1. Afghanistan
2. Azerbaijan
3. Bangladesh
4. Bhutan
5. Cambodia
6. China
7. Georgia
8. **INDIA**
9. **INDONESIA**
10. Islamic Republic of Iran
11. Japan
12. **KAZAKHSTAN**
13. **KOREA DPR**
14. **KYRGYZSTAN**
15. Lao PDR
16. Maldives
17. **MALAYSIA**
18. **MONGOLIA**
19. **MYANMAR**
20. **NEPAL**
21. Pakistan
22. **PHILIPPINES**
23. **REP. OF KOREA**
24. **SRI LANKA**
25. Tajikistan
26. **THAILAND**
27. **UZBEKISTAN**
28. Vietnam

### PACIFIC

29. Fiji
30. **NAURU**
31. Papua New Guinea

More than 95%
Countries of Asia Region got benefited

Member countries are shown in capital & underlined
ACTIVITIES FOR 2009

6th PG COURSE IN SATMET *CONCLUDED ON APRIL 30, 2009*
*(16 Students from 13 Countries)*

6th PG COURSE IN SP: SCIENCE *CONCLUDED ON APRIL 30, 2009*
*(7 Students from 3 Countries)*

13th PG COURSE IN RS & GIS TO BE *CONCLUDED ON 30th June 2009*
*(15 Students from 10 Countries)*

**14th POSTGRADUATE COURSE IN RS & GIS**

*JULY 01, 2009 TO MARCH 31, 2010*

**VENUE:** INDIAN INSTITUTE OF REMOTE SENSING, (NRSC) DEHRADUN

**STATUS:**
21 Students from 13 countries have been selected & admission process is going on

**7th POSTGRADUATE COURSE IN SATELLITE COMMUNICATION**

*AUGUST 01, 2009 TO APRIL 30, 2010*

**VENUE:** SPACE APPLICATIONS CENTRE, AHMEDABAD

**STATUS:**
15 Students from 9 countries have been selected & admission process is going on
NEWSLETTER
As a medium to keep in touch between alumni, professionals from A-P countries and the centre: Apart from progress of center's activities and future announcements, the newsletter in general portrays

**lead article from an eminent person in the field,**

**news from member countries,**

**achievements from alumni (alumni speaks),**

**forthcoming symposiums/workshops**

Memoirs
Marking the end of each course is being regularly brought out.
The **lecture material** of all the CSSTEAP courses had been brought out in lecture volume as well as in CD-ROM and is also been provided to all respective participants.
Digitizing of the publications and storing them on CD-ROM is done from time to time.
Alumni our extended family!!

Established an *alumni forum*

Every alumni can register in our website ([www.cssteap.org](http://www.cssteap.org)) & eligible for certain privileges.

*Discussion forum* on web.

Publishing short scientific articles from alumni in the website to get feedback before submitting to Journal.
FACILITIES PROVIDED
DEDICATED EARTH STATION FOR SATCOM STUDENTS AT SAC CAMPUS AHMEDABAD

PICTURE SHOWS 9 METER ANTENNA OF THE EARTH STATION.
SATMET STUDENTS HAVE ACCESS TO MET DATA FROM METEOROLOGICAL SATELLITES

Picture shows Antenna of the Earth Station at SAC campus (BOPAL) for receiving data from meteorological satellites.
EACH STUDENT IS PROVIDED WITH A COMPUTER HAVING NECESSARY APPLICATIONS SOFTWARE & INTERNET FACILITY.
EACH CENTRE HAS EXCELLENT LIBRARY FACILITY HAVING BOOKS AND INTERNATIONAL JOURNALS INCLUDING e-JOURNALS OF RELEVANCE TO THE SUBJECTS

FACILITIES FOR IMPROVING ENGLISH LANGUAGE SKILLS ARE MADE AVAILABLE UPON THEIR ARRIVAL ON CAMPUS
STATE OF THE ART LABORATORY & FIELD INSTRUMENTS ARE PROVIDED
INDOOR/OUTDOOR GAMES FACILITIES ARE PROVIDED BY THE HOST INSTITUTIONS
WELL EQUIPPED GYMNESIUM AVAILABLE FOR COURSE PARTICIPANTS
INTERNATIONAL HOSTEL WITH MODERN FACILITIES, INCLUDING WELL EQUIPPED KITCHENETTE
OPPORTUNITY TO VISIT DIFFERENT INSTITUTIONS IN INDIA CONCERNED WITH SPACE TECHNOLOGY.
TIME TO TIME CULTURAL PROGRAMMES AND GET TOGETHER ARRANGED
Concluding remarks

FOR THE PAST 13 YEARS CSSTEAP HAS TRAINED

~66 SCHOLARS/ YEAR

~80% FROM OUTSIDE INDIA

TRAINING IMPARTED ~ 400 MAN YEARS

CSSTEAP has emerged as a centre of excellence in imparting education & training in the areas of space applications.