

# 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**

**IIRS Campus, 4 Kalidas Road**

**Dehradun- 248001, INDIA**

**Web : [www.cssteap.org](http://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

## **-HEAD QUARTERS :**

**- INDIAN INSTITUTE OF REMOTE SENSING,  
DEHRADUN**

**-(ALSO CONDUCTS RS&GIS COURSE)**

## **OTHER CAMPUSES**

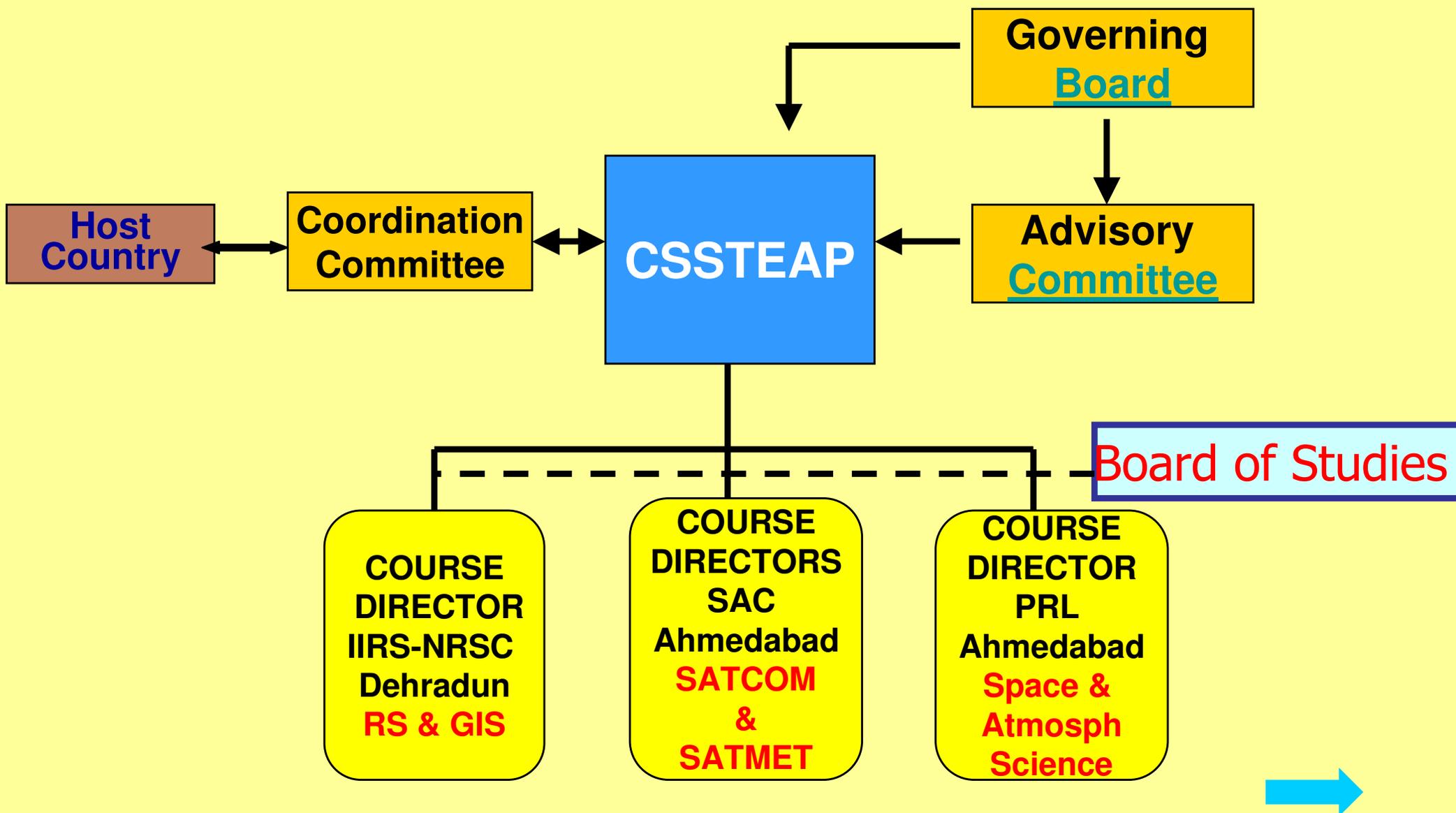
**SPACE APPLICATIONS CENTRE  
AHMEDABAD  
(FOR SATMET & SATCOM)**



**PHYSICAL RESEARCH LABORATORY  
AHMEDABAD  
(FOR SPACE SCIENCE)**



# CSSTEAP: Organizational Structure



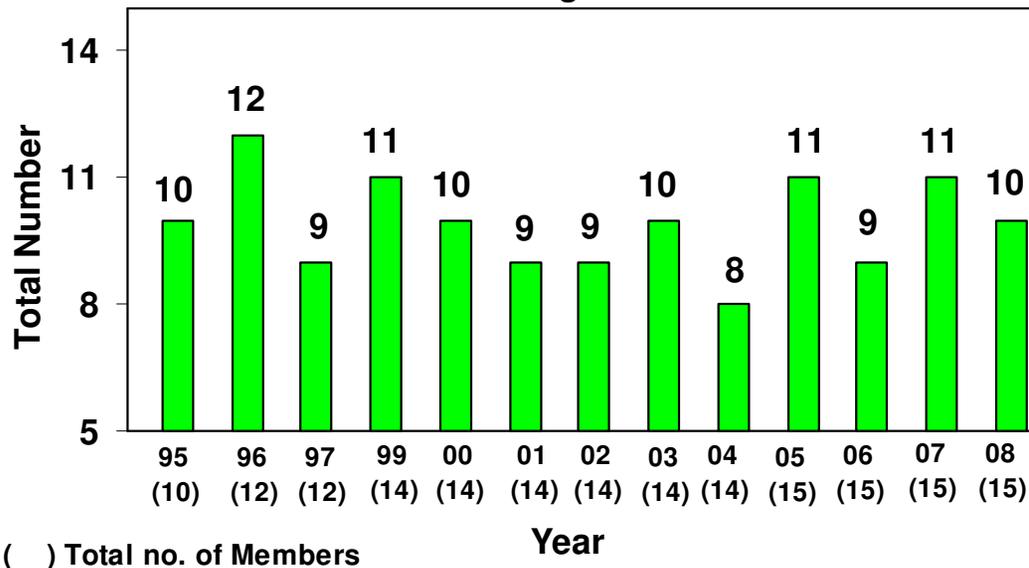
# GOVERNING BOARD

**GB FORMULATES POLICIES OF CSSTEAP  
ONE EACH FROM MEMBER COUNTRIES  
UN-OOSA & ITC OBSERVERS  
DIRECTOR – SECRETARY**

***HELD EVERY YEAR SINCE 1995 (Except 1998)***

**13<sup>th</sup> GB-2008 – (November 26, 2008, Ahmedabad)**

Participation of GB Member Countries in the GB Meetings



**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*
- **10<sup>th</sup> 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...)

# EDUCATIONAL PROGRAMMES

9-month course  
at IIRS in RS &  
GIS

9-month course  
at SAC in  
SATCOM

9-month course  
at SAC in  
SATMET

9-month course  
at PRL in Space  
Science

Award of PG Diploma by CSSTEAP

1 year follow-up project  
in home country

CSSTEAP 1 Yr  
Fellowship in India

By Merit since  
2004 at IIRS

Award of Masters (M. Tech) degree by Andhra University

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*



United Nations



United Nations

# **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 & ATION 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; UNCOPUOS – 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)*

## OVERALL OUTPUT OF PG COURSE STUDENTS

*COUNTRIES  
BENEFITED*

Year	RS & GIS	SATCOM	SATMET	SPACE SC.
1996	25 (14)			
1997 - 98	23 (14)	13 (09)		
1998 - 99	21 (11)		17 (10)	10 (07)
1999 - 00	17 (11)	18 (08)		
2000 - 01	19 (13)		21 (13)	09 (05)
2001 - 02	20 (13)	14 (08)		
2002 - 03	23 (13)		19 (13)	11 (03)
2003 - 04	21 (16)	15 (07)		
2004 - 05	20 (11)		15 (10)	09 (05)
2005 - 06	19 (13)	12 (06)		
2006 - 07	22 (14)		18 (11)	13 (07)
2007 - 08	18 (11)	20 (10)		
2008 - 09	15 (10)		16 (13)	07 (03)

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

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

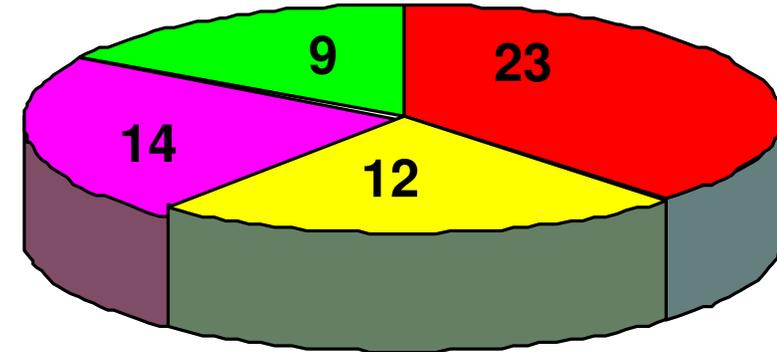
( ) Gives no. of Countries benefited

( Total **27 Countries** )

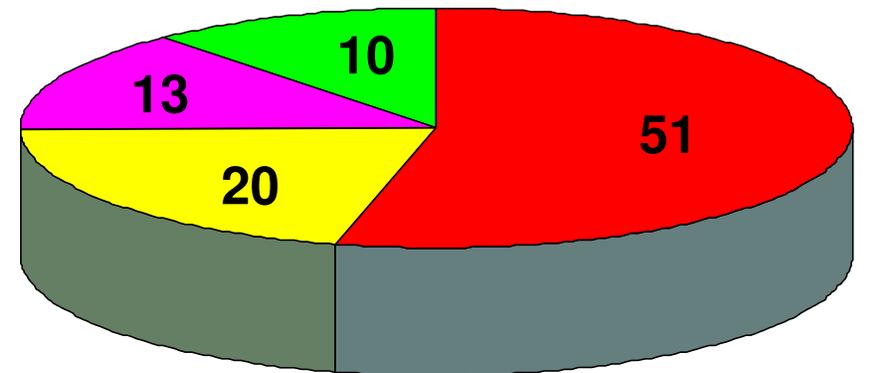
## OVERALL COUNTRYWISE OUTPUT OF M.TECH AWARDED

Country	RS/GIS	SATCOM	SATMET	SPACE SC.	Total
Azerbaijan	1				1
Bangladesh	6		2		8
Bhutan	1				1
India	13	10	7	8	38
Indonesia	2		1		3
Iran	1	2			3
Kyrgyzstan	2				2
Mongolia	3	1			4
Myanmar	6				6
Nepal	9	3	1	1	14
Republic of Korea		1			1
Sri Lanka	2	2	1	1	6
Thailand	1				1
Uzbekistan		1			1
Vietnam	4		1		5
<b>Total</b>	<b>51</b>	<b>20</b>	<b>13</b>	<b>10</b>	<b>94</b>

### M.TECH IN PROGRESS (58)



### M.TECH AWARDED (94)



# Short Courses /workshops

## RS&GIS

Natural Resources and Environment management- .Disaster Management.  
Biodiversity Characterization. Sustainable Agriculture. Urban studies.

## SATCOM: –

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

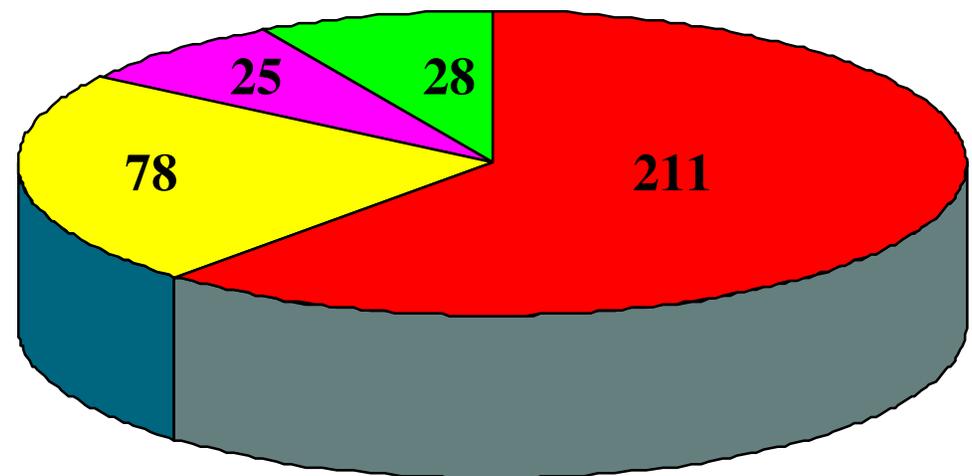
## SATMET

Emerging trends in satellite meteorology. Applications of MW RS

## SPACE SCIENCE

satellite x-ray data processing

## SHORT COURSES (342)



# OUTREACH



## 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

**6<sup>th</sup> PG COURSE IN SATMET CONCLUDED ON APRIL 30, 2009**

**(16 Students from 13 Countries)**

**6<sup>th</sup> PG COURSE IN SP: SCIENCE CONCLUDED ON APRIL 30, 2009**

**(7 Students from 3 Countries)**

**13<sup>th</sup> PG COURSE IN RS & GIS TO BE CONCLUDED ON 30th June 2009**

**(15 Students from 10 Countries)**

**14<sup>th</sup> 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**

**7<sup>th</sup> 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**

# PUBLICATIONS

## 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

*a 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.

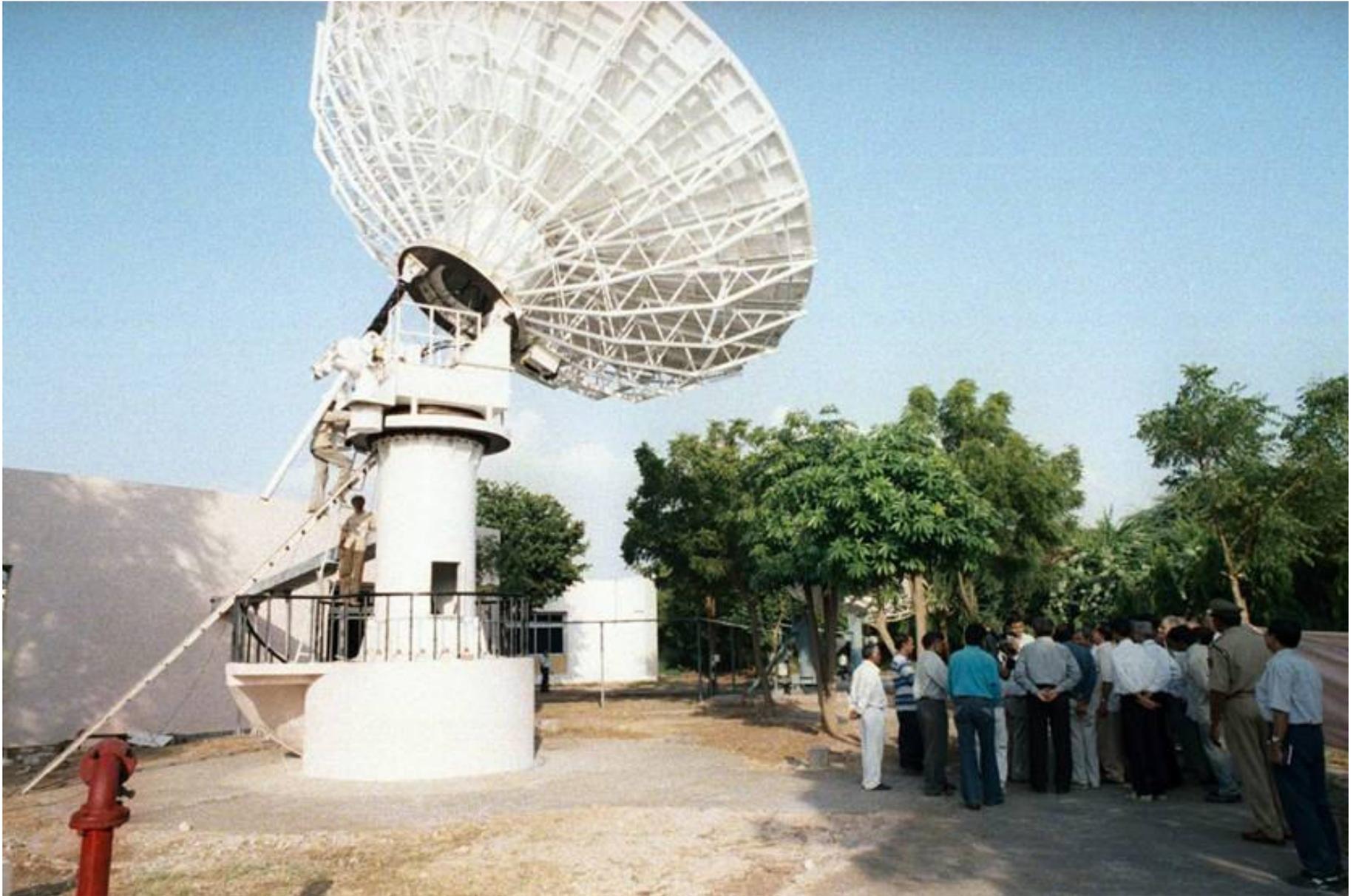
*Discussion forum* on web .

Publishing short scientific articles from alumni in the website to get feedback before submitting to Journal.



**FACILITIES PROVIDED**

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**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.***

