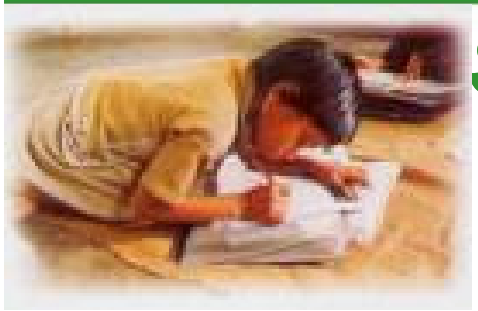
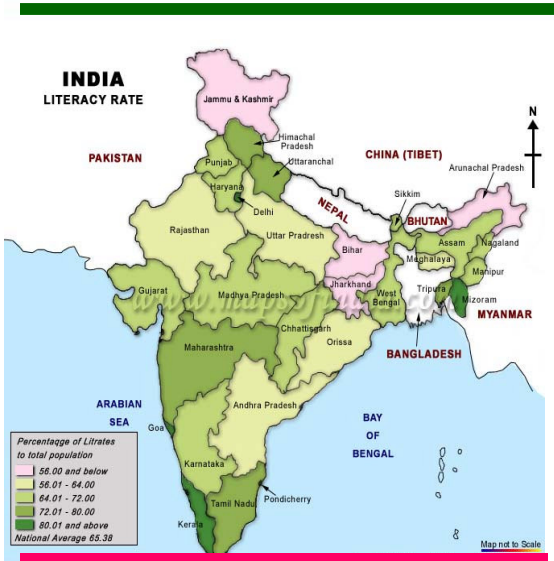


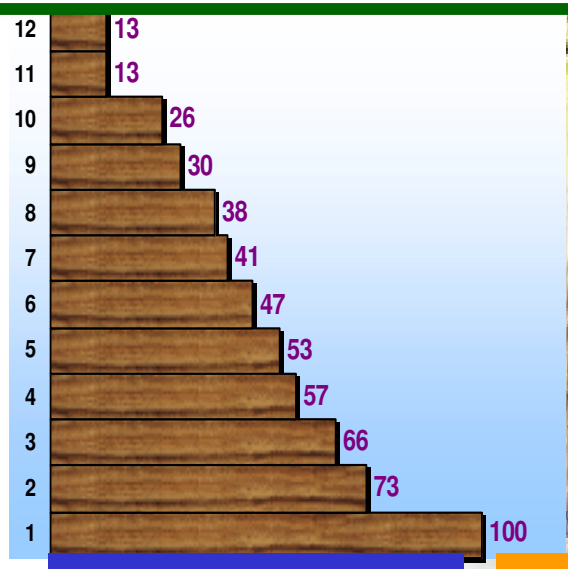
SPACE TECHNOLOGY FOR EDUCATION

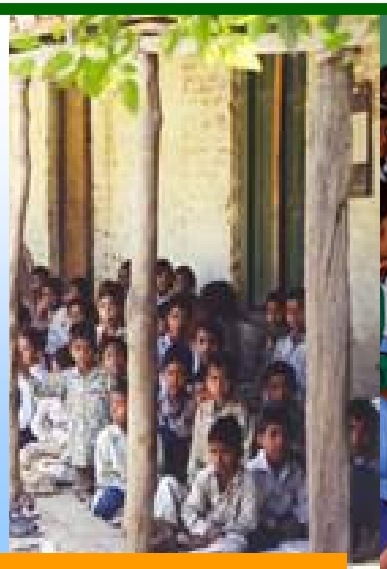
D Radhakrishnan

Indian Space Research Organisation

Education Scenario







1027 Million Population
350 million Illiterates

87 % Drop out
by Std 12

No. of Students per
School 285

No. of Students per
Teacher 71

- Over 50% Teachers at school level are Educated only up to Secondary school level
- Due to the shift in the employment pattern, in recent years, highly talented and qualified persons with teaching skills have been attracted away from moderately paying teaching profession, resulting in shortage of talented teachers

Satellite Instructional Television Experiment (SITE) 1975-76

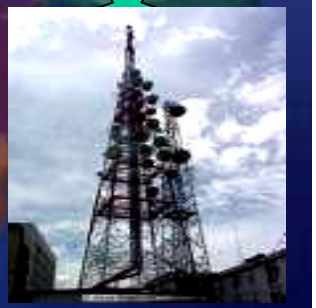
- The Beginning

- Acted as the test bed for satellite based education and training
- Largest Sociological Experiment covering 2500 villages
- Programmes for school children, school teachers and rural audience on Agriculture, Health, Hygiene, Nutrition etc
- 40,000 teachers were trained during SITE
- Substantial knowledge gain in Health and Hygiene
- Ministry of Education and NCERT were active partners

Initiative in Development/Education Communication

Training and Developmental Communication Channel (TDCC)

- Distance Education and Training for Rural Development.
- Effectively utilised by various State Governments and Engineering Colleges, and Agriculture Universities.
- Extensively used for primary school teachers training.



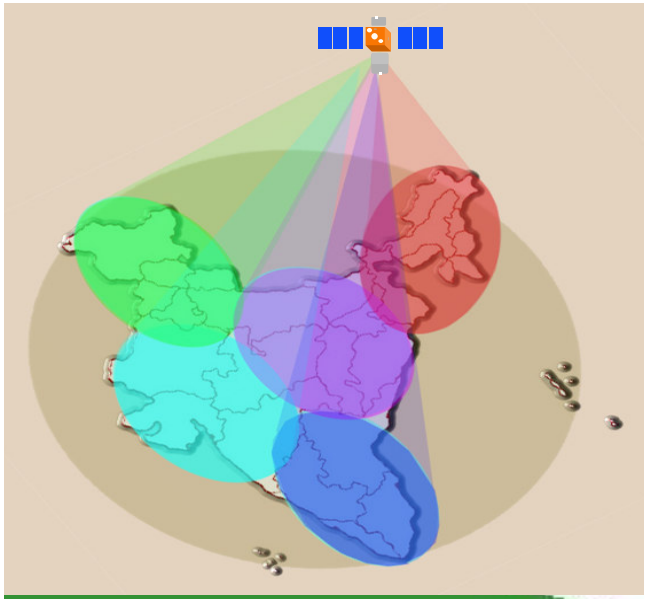
Jhabua Development Communications Project (JDCP)

- Programme started in Nov 1996 and was extended to 1062 Village Panchayats in 3 districts of MP, namely Jhabua, Dhar, Barwani.
- Programmes on Health, Hygiene, Agriculture etc., were broadcast predominantly to tribal population.
- Substantial gain in Health Awareness, General Knowledge and Govt. Schemes.

TDCC

EDUSAT(GSAT-3)

- To support the educational efforts of INDIA, EDUSAT was configured exclusively to meet the educational needs of India.
- *Launched by GSLV-F01 on September 21, 2004*

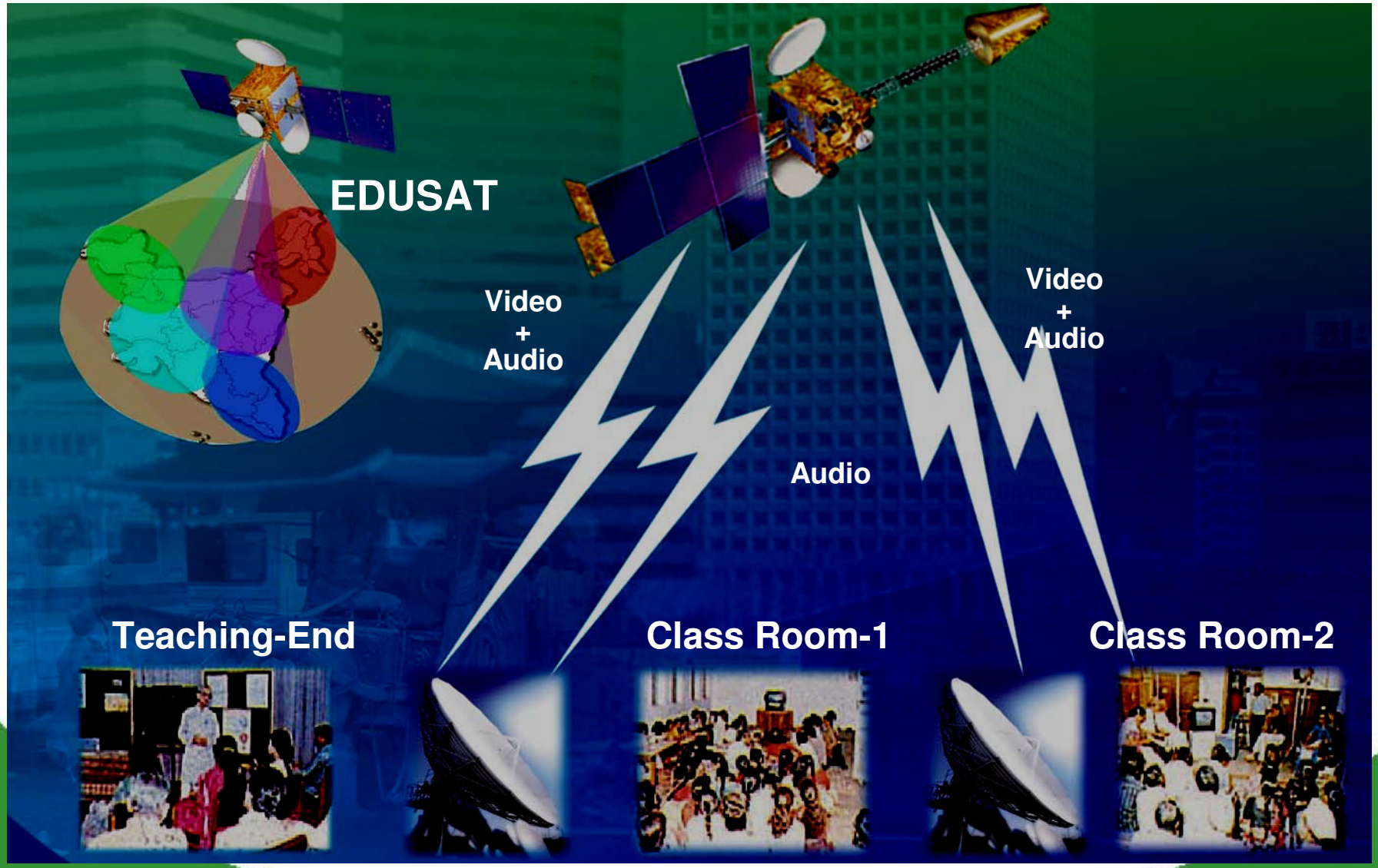


- 5 Spot Beams in Ku Band
- 1 National Beam in Ku Band
- 1 National Beam in Ext C Band (6 Channels)

Education Satellite System - Objectives

- Providing Effective Teachers Training
- Supplementing the Curriculum based Teaching in several Regional Languages
- Providing Access to Quality Resource Persons (Higher & Professional Education)
- Taking Education to Every Nook & Corner of the Country
- Providing Access to New Technologies

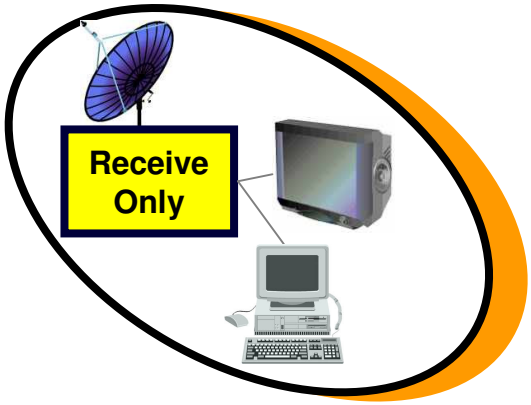
TELE EDUCATION - CONCEPT



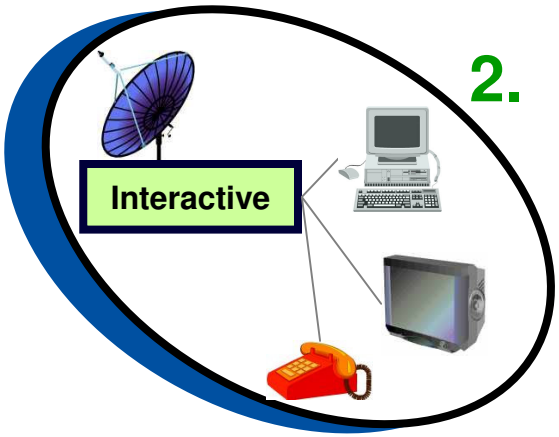
TYPES OF CONNECTIVITY

1. Broadcast

- Receive Only System at all classrooms.
- Covering Primary Education.



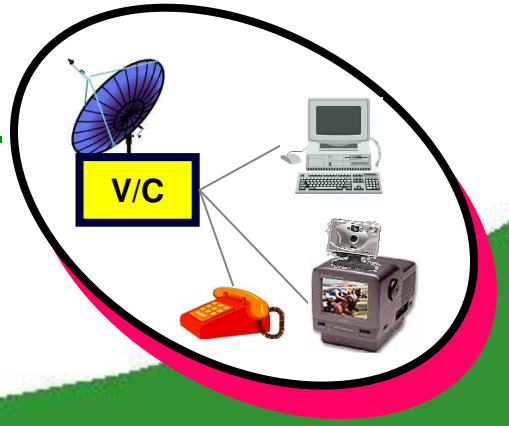
2. Interactive Teaching



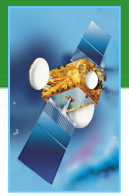
- One-way video and Two-way audio.
- Return link through satellite.
- Secondary and Higher Secondary Education.

3. Video Interactive Teaching

- Video interactive systems.
- Higher and Professional Education.



EDUSAT Network



State Capital

Ku &
Ext C

Studio

HUB

0.9/1.2/1.8m

ROT

School

1.2/1.8 m

SIT

Higher Secondary/University

Candidate User Agencies

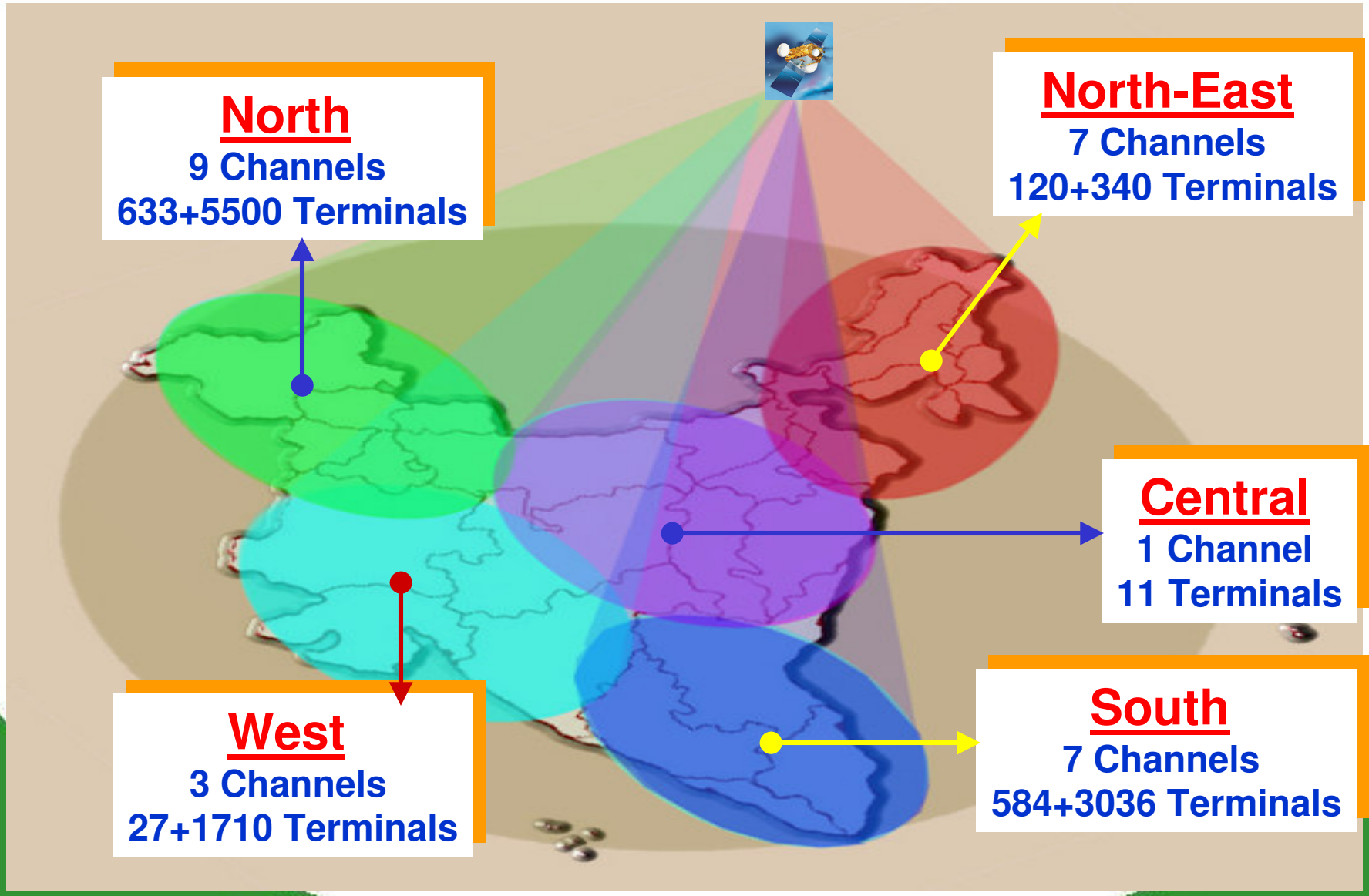
State Level:

- State Universities, Engineering and Degree Colleges
- Higher Secondary and Secondary Schools
- State Education Department
- State Open Universities
- Vocational Institutions

National Level:

- National Level Autonomous Educational Institutions
- National Open Universities.
- Institutes of Continuing Education in Govt. and Pvt. Sectors.
- Professional Institutes.

Edusat Ku-band - Regional Terminals



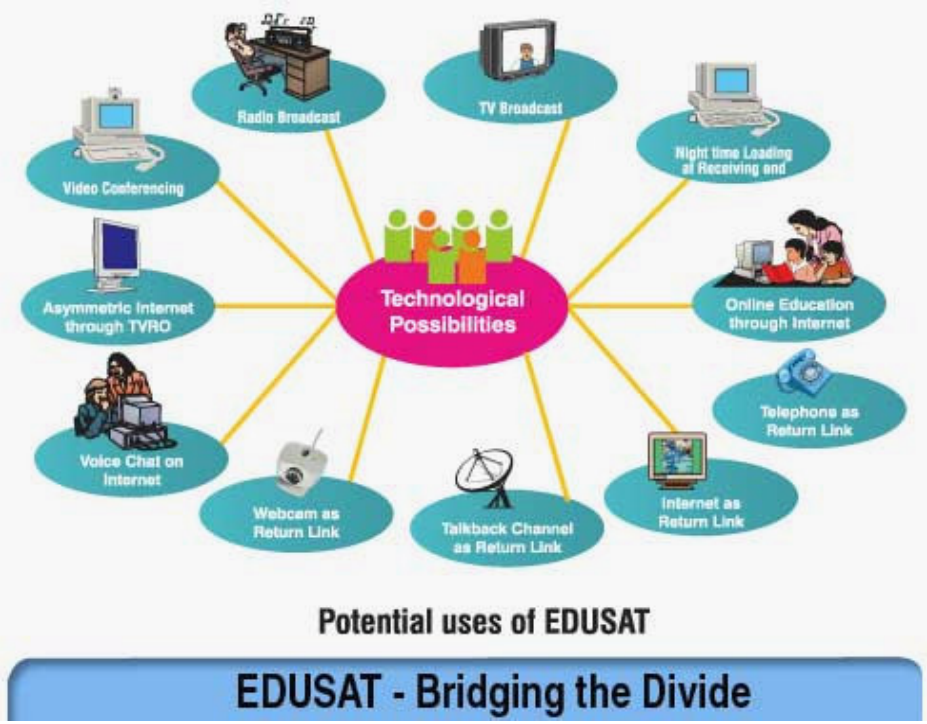
Total : 27 Channels, 11961 Terminals

EDUSAT –Current Utilisation Scenario

- Till date 42 different networks have been established across the country. Most parts of the country have the connectivity.
- Special focus on remote inaccessible areas like Jammu & Kashmir, and North Eastern hill Regions and Islands.
- The total number of virtual classrooms today is around 2100. More than 13000 are receive only terminals (ROT'S) benefiting over 500,000 students.

EDUSAT- Catering to Multiple Uses

	Terminals
Primary Education	13,000
Secondary & Higher Secondary	2,100
Science & Technology Education	100



- Network for the education in Blind Schools in Gujarat
- An Indo US network for Higher Technical Education in engineering subjects

EDUSAT- Key Factors for effective utilisation

- Identification of all major players like State Govts.,educational Institutes and other agencies and also consultations to develop a mutually agreeable Road Map.
- Clear definition of Configuration, setting up of ground segments, cost effective realisation and timely commissioning.
- Familarisation of concepts to the users, the technology, the applications and process of implementation

..... contd

- Operations of network management and maintenance of trouble free operation and human resource training.
- **Suitable content generation** relevant to the subject taught and make it very informative and interesting to the audiences.
- Monitoring of the utilisation of the system, attendance performance evaluation and necessary improvements.

CONCLUSION

- **EDUSAT** a boom to distance learning has enabled teacher's training, primary education, secondary education and higher and professional education
- Reaching out to a large population in remote areas
- Taking education to the doorsteps of the students and has made "Learning when you want and at the speed you want"

Operational Phase

- The Edusat network will be expanded to cover the entire country.
- The users will fund and set up networks with technical support from ISRO.
- Space segment will be augmented to meet the future bandwidth demand.

Thank You