



# पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर (छ.ग.)



क्रमांक: 1499 / अका. / 2014

रायपुर, दिनांक: 10/10/2014

प्रति,

प्राचार्य,

1. शास. नागार्जुन पी.जी. विज्ञान महा. रायपुर (छ.ग.)
2. शास.डी.बी.डी.के. महा. बलौदाबाजार (छ.ग.)
3. शास. बी.सी.एस. पी.जी. कालेज, धमतरी (छ.ग.)
4. शास. वीर सुरेन्द्र साय महाविद्यालय, गरियाबंद (छ.ग.)
5. शास. महाप्रभु वल्लभाचार्य पी.जी. कालेज, महासमुंद (छ.ग.)
6. शास. वि.या.ता. स्नातकोत्तर महा., दुर्ग (छ.ग.)
7. शास. घनश्याम सिंह गुप्त पी.जी. कालेज, बालोद (छ.ग.)
8. शास. पं.ज.ला.ने. पी.जी. कालेज, बेमेतरा (छ.ग.)
9. शास. दिग्विजय पी.जी. कालेज, राजनांदगांव (छ.ग.)
10. आचार्य पं.श्री गुं.मु.ना.सा. शास. महाविद्यालय, कवर्धा, जिला-कबीरधाम (छ.ग.)

विषय : अधोसंरचना तथा EDUSAT/ISRO CONNECTIVITY के संबंध में।

= 0 =

उपरोक्त विषयान्तर्गत ISRO/EDUSAT E-Learning से संबंधित

- (i) Proposal for Set up of EDUSAT Facility at Pt. Ravishankar Shukla University, Raipur
- (ii) Virtual Classroom Setup for Pt. Ravishankar Shukla University, Raipur

की छायाप्रति इस पत्र के संलग्न कर प्रेषित है। महाविद्यालयों में ISRO के EDUSAT के माध्यम से E-Learning के द्वारा अध्यापन कार्य हेतु ISRO एवं EDUSAT/ CONNECTIVITY प्राप्त किये जाने हेतु अपने जिले के समस्त शासकीय एवं अशासकीय महाविद्यालयों को उपरोक्त (i) एवं (ii) की छायाप्रति भेजकर, उनसे प्रस्ताव संबंधी जानकारी प्राप्त कर, समग्र जानकारी इस विश्वविद्यालय को प्रेषित करें।

आदेशानुसार,

संलग्न : उपरोक्तानुसार।

उप कुलसचिव (अका.)

पृ. क्रमांक: 1500 / अका. / 2014  
प्रतिलिपि,

रायपुर, दिनांक: 10/10/2014

1. प्रो. के.के. घोष, अध्यक्ष, रसायन अध्ययनशाला,
2. प्रो. संजय तिवारी, अध्यक्ष, इलेक्ट्रानिकी फोटोनिक्स अध्ययनशाला,
3. कुलपति के सचिव/कुलसचिव के निजी सहायक, पं. रविशंकर शुक्ल विश्वविद्यालय, रायपुर को सूचनार्थ अग्रेषित।

उप कुलसचिव (अका.)

## **Proposal for Set up of EDUSAT Facility at Pt.Ravishankar Shukla University, Raipur**

Pt.Ravishankar Shukla University and Higher Education Institutes of Chhattisgarh will pool together their capabilities of utilising the power of EDUSAT for higher education and to foster a new era of technology enabled education in the State.

The Centre for EDUSAT FACILITY of PRSU University – Raipur will conduct the PRSU EDUSAT live interactive audio-video lecture programmes transmitted through KU-Band provided by ISRO, Bangalore. Up linking and down linking facilities are available at the University. Down linking facilities will be provided to affiliated colleges who are member of EDUSAT.

### **EDUSAT-based Higher Education:**

---

The satellite-based education comes under the ambit of the prestigious EDUSAT project of ISRO, Government of India. All the colleges affiliated to PRSU will be networked through this programme.

- EDUSAT is the first Indian Satellite designed and developed exclusively for serving the educational sector.
- It is mainly intended to meet the demand for an interactive satellite based distance education system for the country.
- Compared to the satellites launched in the INSAT series so far, EDUSAT has several new technologies.
- **It is the first satellite configured for audio-visual medium, employing digital interactive class room and multimedia system .**
- EDUSAT is being utilized through a collaborative project of ISRO, MHRD and IGNOU.
- The Ministry of Human Resources Development (MHRD), Govt. of India has been promoting actively the open and distance learning systems in the country. Ministry is encouraging the use of EDUSAT in elementary, higher and technical education, vocational training and teachers training.
- ISRO provides the space segment for EDUSAT System and demonstrate the efficacy of the satellite system for interactive distance education. ,
- IGNOU is the nodal institution for utilization of EDUSAT.



✓

Following networks of EDUSAT are currently in operation-

- IGNOU, NCERT, UGC, AICTE and ICAR.
- All above mentioned networks are functional in universities, autonomous consortiums and institutions of division/district headquarter.
- Programme telecasted through these networks are mostly in English medium.

### **Mission of PRSU: Improve access, equity and quality of Higher Education**

- 
- **Pt. Ravishankar Shukla University has planned to establish a hub fully dedicated for higher education in Chhattisgarh through EDUSAT.**
  - Especially in higher education of Chhattisgarh, there is a big gap of infrastructure and basic facilities between institutions of rural and urban areas. This gap will be narrowed through EDUSAT satellite based education.
  - The ultimate goal of the University is to provide higher education and training at the doorstep of the professionals, students and other seekers of education.
  - EDUSAT is very useful in the present context of shortage of well-trained teachers in colleges of Chhattisgarh and helped the larger student community EDUSAT-based class rooms.
  - EDUSAT can also be used for university administration and for conducting online examinations and evaluations. It is possible to upgrade technology for inter-connectivity between national and regional beams of EDUSAT for conducting classes across the country."
  - Satellite Interactive Terminals in rural & urban Colleges will be established. Target group will be large number of students enrolled in rural and tribal areas.
  - Live audio-video two way interactive lectures are given by expert faculty drawn from PRSU University/IIT/affiliated colleges during semester session. The lectures presently focus on the needs of Humanities, Physical Sciences, Chemical Sciences, Mathematical Sciences and Life

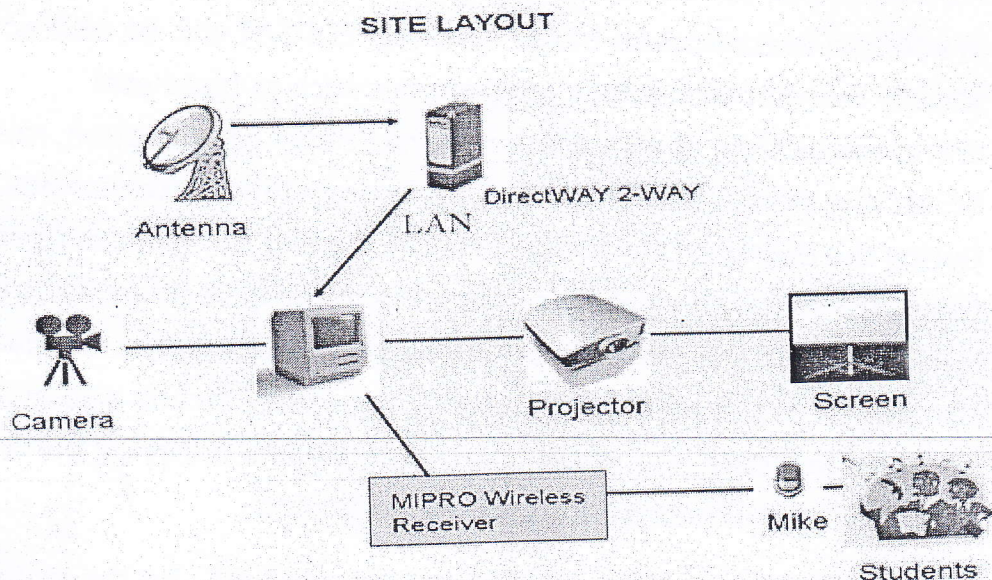
- ✓
- Sciences. Lectures delivered by experts during Orientation & Refresher courses as well as at UGC Coaching Centre for preparation of competition examinations will also be telecast..
- Sessions related to technology, soft skill, career development and exam-revision will be conducted.
  - In addition to curriculum-based teaching, EDUSAT will be utilized for socially relevant technology programmes such as bio-diesel entrepreneurship, energy efficiency and energy conservation, rainwater harvesting along with computer-based competency programmes.
  - During the course of the lectures and at the end of the lectures students from their respective colleges interact with the expert faculty to get clarification on the subject matter taught. All the lectures are given with the help of power point presentation. The expert faculty also make use of the white board and tablet board facility while clarifying the doubts asked by the students during interactive session.
  - MPs and MLAs may be approached to donate funds for the welfare of students of their constituencies. UGC also appreciated this scheme and encouraged it for further expansion of EDUSAT project.
  - EDUSAT may prove a unique project of its own kind dedicated for thousands of students enrolled in colleges of rural and tribal areas.

#### **Proposed Facilities:**

- Proposed PRSUEdusat Programme two way live audio-video interactive Programme.
- PRSU Edusat Programmes will be live transmitted and recorded in DVD format.
- Issue of DVD recorded programmes compliment copy to the PRSUEdusat member colleges.



## Technical Requirements for Installation & Commissioning of Remote Centers



1. Provision for dust free and preferably Air conditioned room (atleast 5x5 sqft) for the VSAT IDU (Indoor Unit).
2. The ODU (Out Door Unit, where the VSAT antenna is installed) site should have independent 24 hours access. There should be sufficient provision for the safe accessibility towards ODU site (for e.g., permanent ladder in case the Antenna needs to be installed at the terrace). The ODU site should have minimum of 5x5 square feet of smooth levelled area for VSAT installation. If not, then platform needs to be built.
3. The maximum length of the pair of connecting cables, between IDU and ODU, is 120 feet. The route of the cables should be fixed keeping in mind the length limitations.
4. Classroom size: 20ft(Width) X30ft (Length), this is recommended size and the actual size will depend on the number of students and actual space availability at the location.
5. There should be dedicated UPS of atleast 1.0 KVA for the VSAT.
6. 8 Number of 5 Amps Points required at the remote classroom to be provided by the user.

- ✓
7. In the classrooms the windows need to be kept opened if the ambient noise outside is not very high.
  8. There should be thick curtains on windows so that they cover 70% of the wall at about 6 inches away from the wall. The front wall need not have curtains.
  9. Lighting - CFL lights/ SRGB lights of 120W capacity to be used. The lights should be white and not yellow colour. The temperature of the lights should be of around 5600 deg Kelvin. Two light each for every two rows.
  10. Power Load in the classroom: Approx 2KVA including projector
  11. The nominal power operating condition of VSAT is: Phase to Earth = 220.0 volts(+/- 1%) , Phase to Neutral = 220.0 volts(+/-1%) , Earth to Neutral = Always less than 2.0 volts.
-



## Virtual Classroom Setup for Pt. Ravishankar Shukla University, Raipur

### Introduction

Pt. Ravishankar Shukla University, founded in 1964 is Chhattisgarh's largest and oldest university. While celebrating Golden Jubilee, the university is focused on leveraging technology to benefit the student community.

Extension of quality education to remote and rural regions becomes a Herculean task for a state with tough and inaccessible terrain like Chhattisgarh. Since independence, India has seen substantial increase in the number of educational institutions at primary, secondary and higher levels as well as the student enrolment. But the lack of adequate rural educational infrastructure and non-availability of good faculties in sufficient numbers adversely affect the efforts made in education.

Satellites can establish the connectivity between University campus with adequate infrastructure imparting quality education and the large number of rural and semi-urban educational institutions that lack the necessary infrastructure. Besides supporting formal education, a satellite system can facilitate the dissemination of knowledge to the rural and remote population about important aspects like health, hygiene and personality development and allow professionals to update their knowledge base as well. Thus, in spite of limited trained and skilled faculties, the aspirations of the growing student population at all levels can be met through the concept of tele-education.

Pt. Ravishankar Shukla University is in the process of implementing a tele-education network for the benefit of the rural student community. The university would like to implement the Network initially on the Chhattisgarh Edusat network which is operating from SCERT Campus, Raipur. The Studio at the University campus would be connected to the Edusat Hub through leased-line.



Following are some of the unique benefits for the Pt. Ravishankar Shukla University students by implementing the e-learning program.

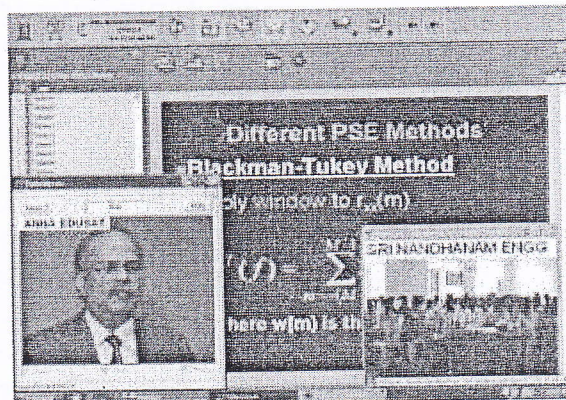


### Expert Lectures / Training / Demo on Subject / Curriculum

EduSAT serves as a platform where the eminent faculty and expert resources who are available at University Campus to deliver lecture to students at all colleges through the EduSAT network. Rural college who usually suffer from having expert faculty can benefit by this program.

Demonstrations of specimens, models which are mandatory part of science subjects are possible through the EduSAT network. Most of the specimen and models are usually not available at the rural colleges. Thus EduSAT prove to be an unbeaten mode of reaching out quality education to college students.

Some of the states using EduSAT have allocated a period as a part of their time table which would be common across the state to mandate quality education to college students.



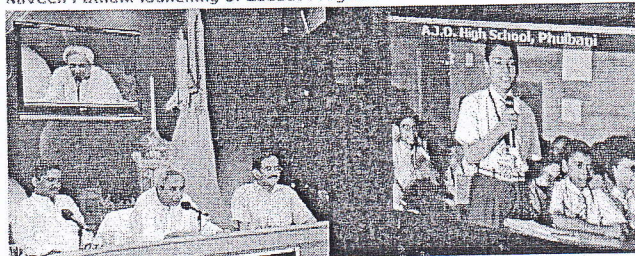
### Subject Revision before Semester Examinations

The EduSAT network can be used for providing subject revision before Semester Examinations. Exams are a great fear and tension to students. Proper Guidance by eminent faculty before the exams would help students' un-stress and be motivated.

### Training on Language / Communication

One of the major skills that differentiate the rural students from the urban students is their communication skill. This is a major concern for the rural students to compete with their urban counterparts. EduSAT have proved to be a successful platform to reach out the rural students and provide training on Communication Skill.

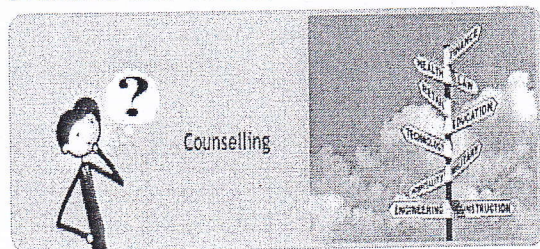
Naveen Patnaik launching of EduSAT Programme at ORSAC.



Naveen Patnaik launching of EduSAT Programme at ORSAC.

### Career Counseling

Career counseling is important for the students for knowing the various career options available and chooses their area of interest. It is also important that a person who is



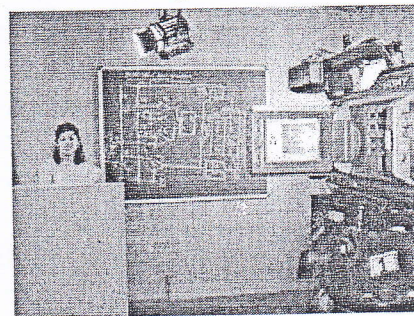
aware about all the career options available provide such counseling. In the even of a single person who knows entire range not available, multiple people have to be organized for counseling. Having a single person as well as mix of various people at all colleges is impossible which results in



the students deprived of knowing about career options. EduSAT has proved to a network which has provided career counseling to both students in the urban colleges as well as the students in the farthest of rural areas.

### **Coaching for Competitive Exams and Entrance Exams**

The outgoing college students have to take up entrance exams to get admitted to the best institution of their choice. Entrance coaching is predominantly available only at urban areas and is mostly done by private institutions. These coaching are extremely expensive and are not affordable by all students. Few of the colleges organize free coaching but not available to students across the states due to the physical availability. An EduSAT network can provide a common platform to all students for dissemination of entrance exam coaching.



### **Telecast of Cultural Programs**

Apart from providing curriculum based training and entrance exam coaching, this network can be used as a platform for extra-curricular activities like Art and Culture. Cultural competitions can be conducted and the winners are announced.

### **Faculty Training Programs**

With technology growing in a galloping phase, it is mandatory for keeping the faculties aware and trained of the latest happening. The commercial part of the growth is available through the media. But the academic part is not easily available to the common man. This situation calls for training of faculties who teach to the students, who are going to drive the future of the country. Even though training is conducted, the way it is disseminated to the faculty is through various layers and the message does not reach the faculty as expected. EduSAT has been a platform where the trainers can directly reach the faculties at their college disseminating training the way it is intended to.

This would also reduce the cost of training as the transportation and boarding is not required. Also the frequency of training can be increased and mandated as there is no hassle for faculties to attend the training.

### **Industry Institute Interaction**

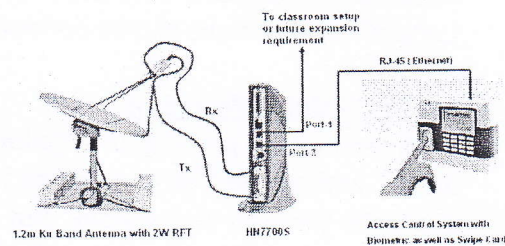
University can use this network to have interactive sessions between industrialist and Student community. Apart from Industry specialist, eminent personalities who visit the university can interact with student community of all the remote institutions through this Network.



### Other Applications

EduSAT network interconnects all the remote institutions to the central campus. So this can be utilized for numerous other applications. Some of the states are in the process of evaluating many applications on this network. Few of such applications are:

- **Centralized E-Library:** Library is the most important source of Information to students. The more the number of books, the better students gets benefited. But maintaining a library with all books at all colleges would be a huge investment and not viable most of the times. With the digitalization of books, the e-books can be shared over the network connected to all colleges. Also, it can be common to all the colleges. EduSAT network can be utilized for creating such Centralized digital library.
- **Biometric based Centralized Attendance and Leave Management System:** Attendance and leave management for institutions have become a concern in most of the states especially for the Government institutions. Many states have a team of officers who visit the institutions frequently and inspect the attendance on faculties / officers to ensure discipline. The EduSAT network can be utilized for implementing a centralized attendance and leave management systems, through which, the officers can centrally monitor the attendance of the officers and faculties. This would help in 100% fool proof attendance monitoring and also would save cost of physical inspection.





## Implementation Plan of Virtual classroom based Tele-Education for PRSU

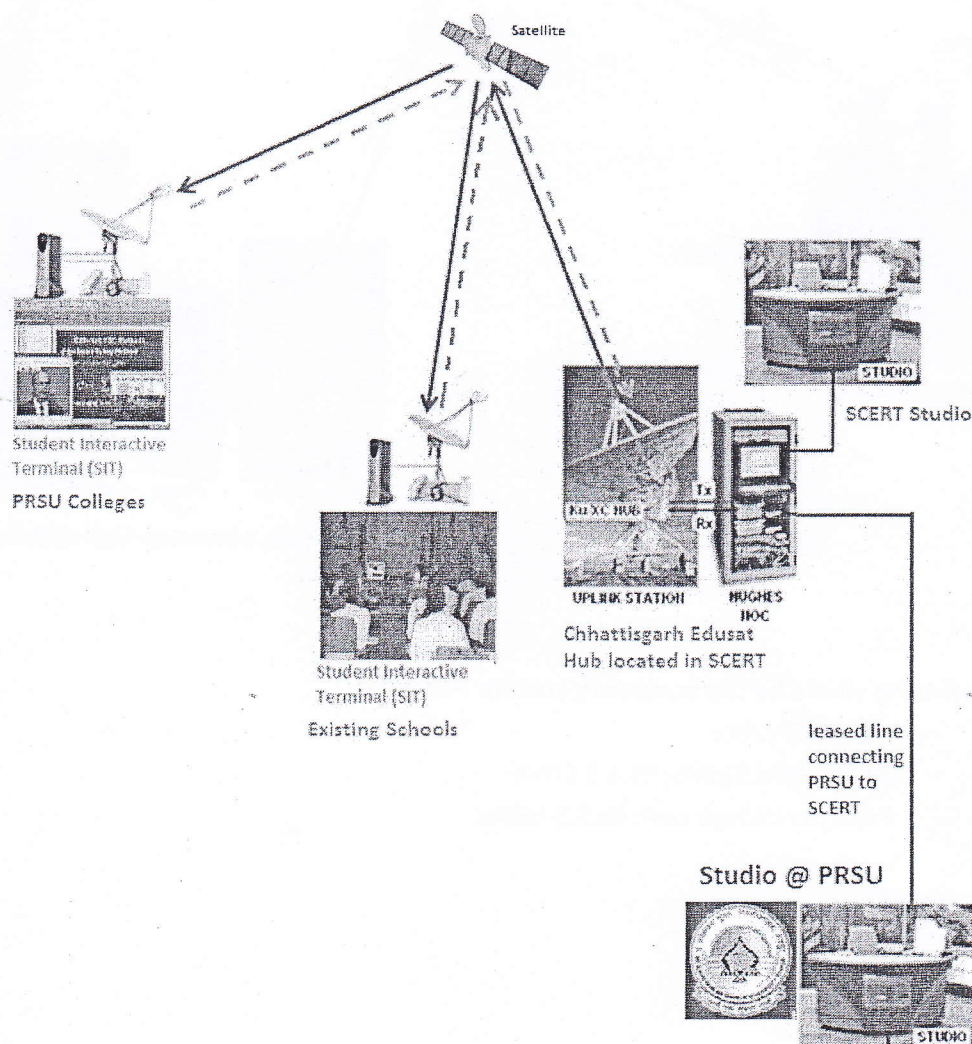
The Tele-Education program for Pt. Ravishankar Shukla University would be in two Phases.

- Phase 1: Implementation of Tele-Education network to a set of identified colleges on the existing Chhattisgarh Edusat Network operating from SCERT.
- Phase 2: Implementing a dedicated network for PRSU and delinking the connectivity to Chhattisgarh Edusat, enhancement of Studio and implementing virtual class room setup at all colleges.

### Phase 1:

The phase one of Tele-education for PRSU is planned through the existing Chhattisgarh Edusat Network. The University would implement a basic teaching end based studio at the university campus and connect it to the Edusat Hub located in SCERT. University would conduct their sessions while SCERT is not doing any program on time sharing basis. The satellite bandwidth for the Edusat network is provided by ISRO and hence PRSU need not spend for the bandwidth.

### Network Schematic for PRSU Phase 1 Implementation



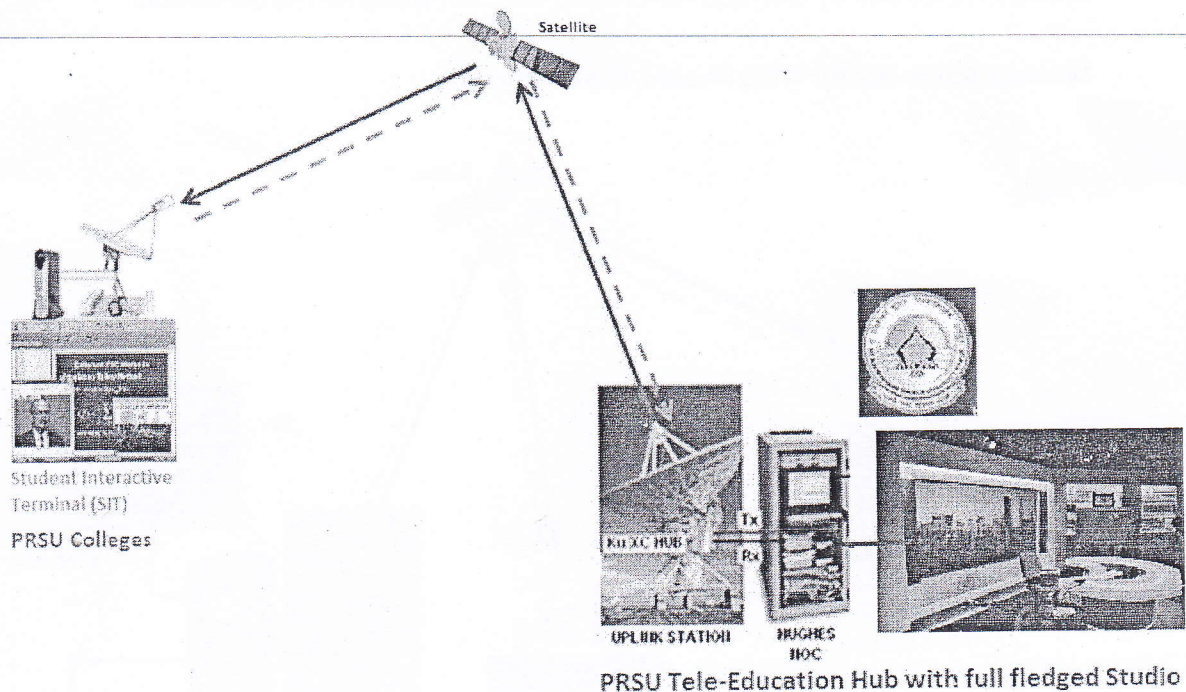
Following would be the budgetary cost for Phase 1:

- Implementation of Virtual Classroom (Satellite Interactive Terminal) at 50 colleges: Rs.1.75 Crore
- Implementation of Basic teaching end Studio at University Campus: Rs.20 Lakhs
- Leased line charges to be paid to BSNL: Rs.1 Lakh per annum

## Phase 2:

During phase two, the university would implement their own hub at the university premise and implement a full fledged Studio adjacent to the Tele-education Hub. Those colleges who are not connected during phase one would get connected during phase two. PRSU to get the bandwidth allocation directly from ISRO and procure the Hub and Studio by themselves.

### Network Schematic for PRSU Phase 2 Implementation



Following would be the budgetary cost for Phase 2:

- Hub: Rs.3 Crore
- Full-fledged Studio: Rs.1.5 Crore
- Extra per college cost: Rs.3.5 Lakhs