National Mission on Education through ICT
Open Source Mission

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10. Development of Certification & Testing Modules for Virtual Technological Universities & creation of VTU, multi media research and international programmes

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18. Development of Vocational Educational modules and use of haptic devices for education & training

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- Role of IIT Bombay to be discussed

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- CDEEP was formed to make available IIT Bombay's
  - Courses
  - Educational methodologies

  to the outside world

Course Dissemination Methodology

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- Free video on demand service
  - Already available within IIT Bombay
  - Proposed to be made available to outside students as well

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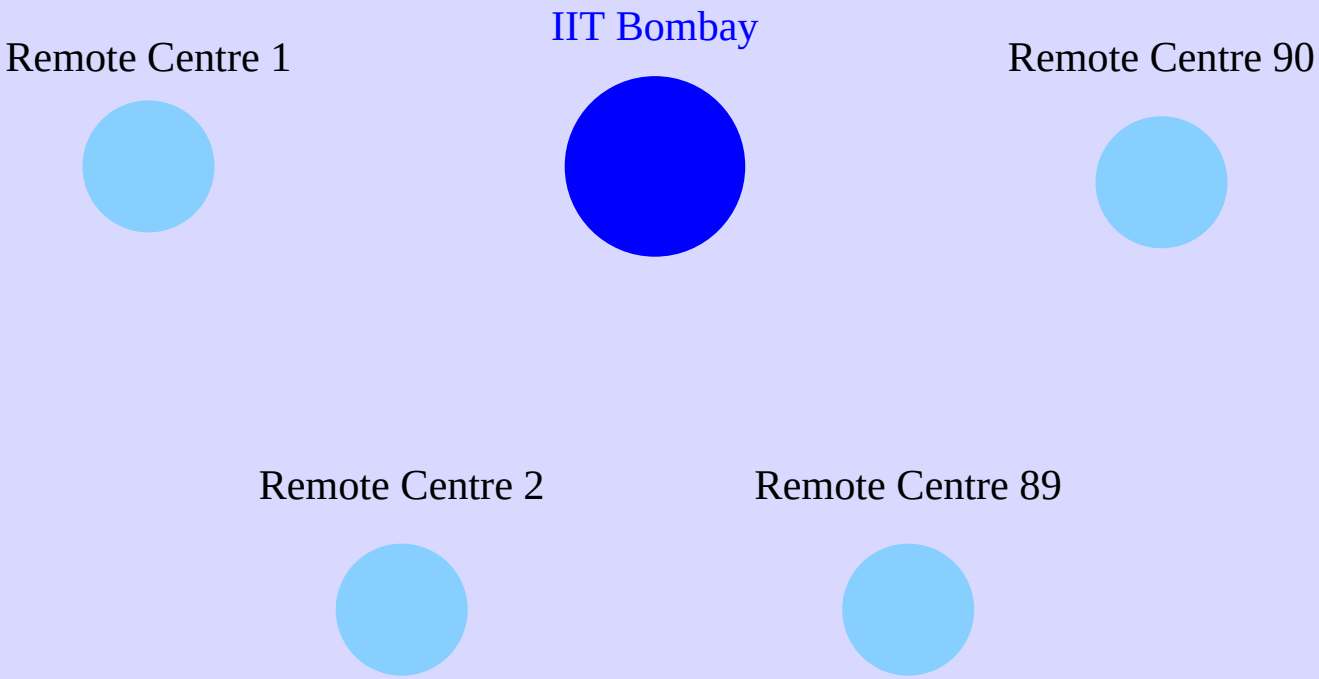
- 20 more remote centres are in the pipeline

Graphical representation of transmission through EDUSAT



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- 30 courses will be transmitted next year

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- 100 video courses have been created so far - about 4,000 hours of lectures recorded

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  - Students - through our regular courses
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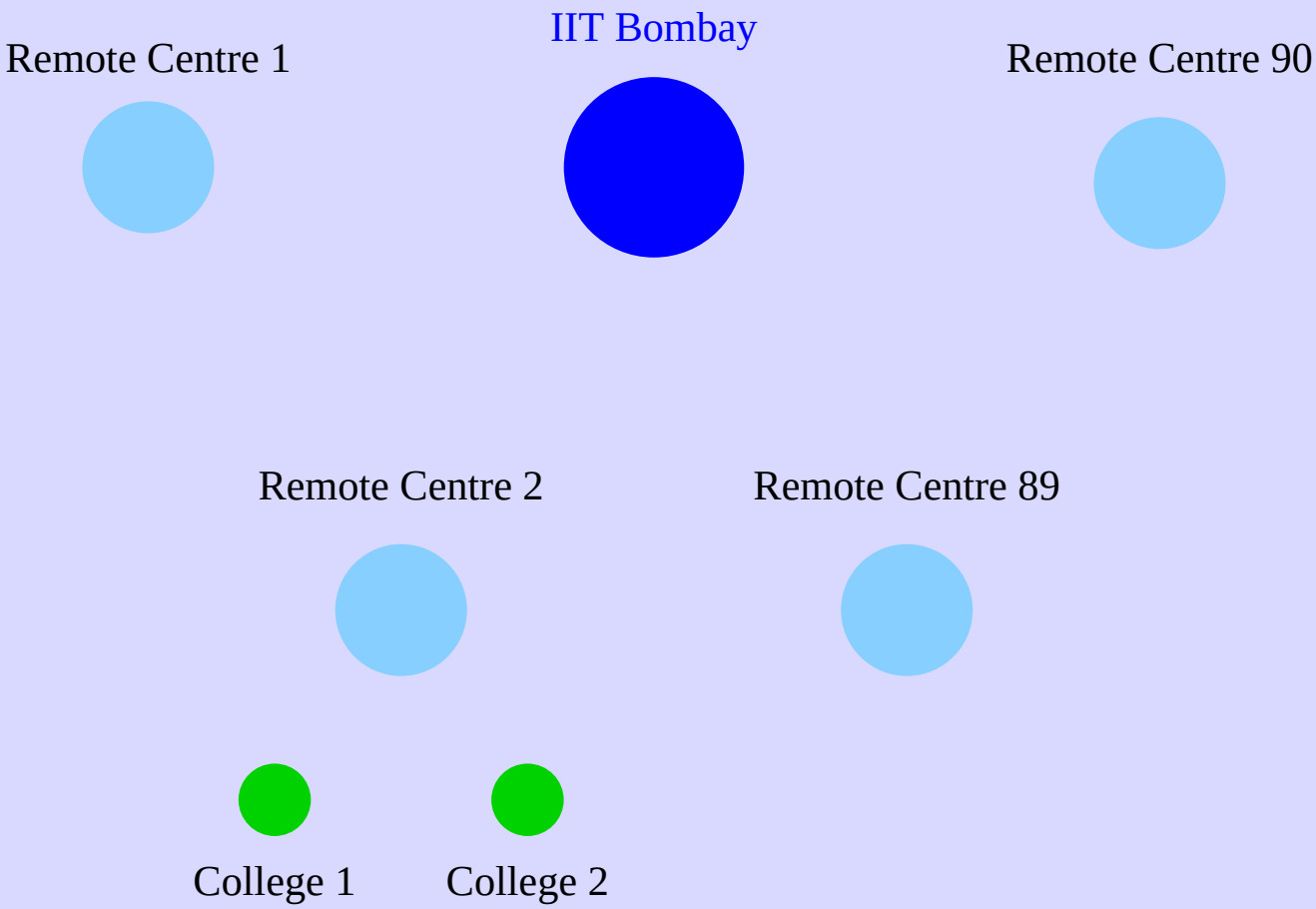
- National programme on technology enhanced learning (NPTEL)

Empowerment of teachers



- A lot of teachers can be trained (say, on Scilab) simultaneously

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- Blender
  - 3-D animation, relevant to science and engineering

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- Now, some departments have bought licenses

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- Promoting the use of open source software in audio/video courses and virtual labs, the other thrust areas of this mission.

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- Ported Matlab code that accompanies the book Digital Control to Scilab for low cost Indian edition

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- This is much smaller than video recording, which requires ten times more storage space for mpeg1 format.

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- Only some basic aspects of a software, enough to start using it, need to be taught through spoken tutorials.
- After one achieves a familiarity with the software, one will be able to study the advanced topics from the manuals.

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4. All steps involved in a process get automatically explained, as the spoken tutorial is the transcript of an actual session. So, there is no question of leaving out any step.

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2. The student can try the target software in parallel, as she listens to the spoken tutorial. This allows the student to *p*articipate in the training, as opposed to being a passive observer.

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2. The infrastructure required to create a spoken tutorial is inexpensive. Only a head phone with audio input is the additional hardware that is required. We have found that even inexpensive head phones, costing about three euro give excellent results.

Socioeconomic benefits of spoken tutorials

1. The main advantage of a spoken tutorial over a video recording is the size of the file: the former generates at most one tenth the size of the file created by the latter. This results in a large number of benefits: small storage, small bandwidth for streaming, etc.
2. The infrastructure required to create a spoken tutorial is inexpensive. Only a head phone with audio input is the additional hardware that is required. We have found that even inexpensive head phones, costing about three euro give excellent results.
3. There are many screen capture software systems available as free or as shareware, costing about 10 euro. As a matter of fact, it is possible to find free screen capture software for every one of windows, linux and Mac OS X operating systems.

Socioeconomic benefits of spoken tutorials - continued

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Socioeconomic benefits of spoken tutorials - continued

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2. Because a large number of people can create these tutorials, it lends to collaborative effort. If we have proper administrative infrastructure, it is possible to create learning aids for the most complicated programs through community effort.

Socioeconomic benefits of spoken tutorials - other languages

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2. It has a capability to empower many people, including students in villages, to participate in content development.
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4. Thus, this has the potential to reduce the digital divide between people who live in the country side and the residents of cities.

Areas of collaboration

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- Content generation

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- More discussion is required

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- Mission10X of Wipro has shown interest in taking the spoken tutorial to their teacher training programmes

Spoken tutorial effort

- Procedure to identify areas

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- Example generation

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- Script writing

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- Review, accept

Thank you