

Aakash Tablets in Education

IIT Bombay along with the Ministry of Human Resource Development has developed Aakash tablets for educational purpose. Honorable President of India Shri Pranab Mukherjee launched the new version of Aakash Tablet, Akash 2.0 on the occasion of National Education Day held at Delhi. The National Mission on Education using ICT (NME-ICT) envisages that these tablets should be deployed for empowering the students and teachers of the country. The tablets are expected to be deployed in more number for academic and research activities in educational environment.

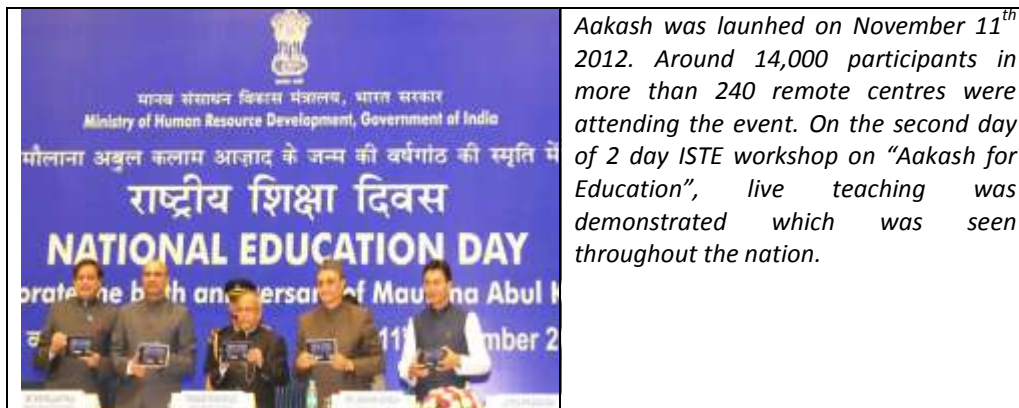


Figure 1. Launch of Aakash 2.0

Aakash 2.0 is a complete educational purpose tablet and not designed with hi-fi configurations. Aakash 2.0 includes 3D-modelling, C++ programming, remote and collaborative training applications, robotic control and live assessment tools. IIT Bombay has partnered with the Center for Development of Advanced Computing (C-DAC), to assist with the hardware testing and logistics.

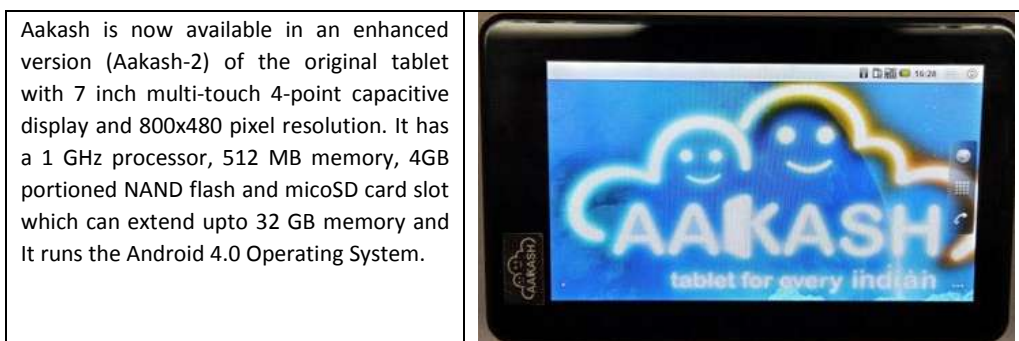


Figure 2. Aakash Specifications

Aakash 2.0 can be operated with Wi-Fi which enables the students with easy internet connections. It is also equipped with USB slots in which one can use internet modems provided by different network providers. Aakash 2.0 is not equipped with third generation facilities. So, one cannot use this tablet for video calling or high speed internet. Akaksh 2.0 is featured in such a way that it is best suited for educational purpose, not for commercial use. Future versions of the tablet will continue to have further enhancements.

Aakash Workshop at NIT Trichy

The workshop on Aakash for Education was conducted National Level at IIT Mumbai and it was attended by NIT Trichy participants (around 15 Faculty members) at CSG, NIT Trichy.



Figure 3. Participants attending workshop on November 10th and 11th, 2012 at CSG, NIT Trichy

Aakash Applications

The tablet comes with variety of applications. A sample set of applications is shown below.



Figure 4. Sample page of applications

The tablet also includes Mango learning solutions for game-based educational modules, interactive smart books and the full CBSE curriculum and assessment tools. Intelligia finger tracing apps have also been included to teach letter writing to toddlers. Some of the salient applications are highlighted below.

a. Blender : Blender is a free and Open Source software product, used for creating animations, rendering, video editing, etc.

b. Clicker : Clicker devices are used to collect instant feedback from a large number of students, either as a response to a question, or to a quiz. A quiz question now gets fully downloaded on individual student's Aakash tablet, through Wi-Fi. A multiple question test can now be conducted. All the questions of such a test are downloaded on the student tablet. Time control is maintained by Aakash. At the end of the test time, all answers are automatically collected, and individual scores get recorded in the back-end system.

c. Content Distribution : Apart from displaying text files in various formats, Aakash can play video and audio content. A lot of content is available through projects such as NPTEL, Spoken Tutorials, Teachers' Training Workshops, etc. Additionally, Wikipedia, Gutenberg project, Connexions project at Rice University, and many such global efforts have generated a large pool of knowledge content in Open Source. The contents can be kept in the tablet or they can be accessed.

d. proximity : proxyMITY enables creation of interactive lessons, by importing lecture video and presentation slides. The name stands for Proxy Multimedia Integration Tool for You. The entire lesson can be published in the form of either a desktop standalone application, or as html content to be viewed within a web browser.

e. Robot : The project aims at design and deployment of robots, for enhanced teaching of subjects in Engineering Colleges and to Create Open Courseware for Embedded Systems for engineering students, based on robots. A Robot-control application runs on Aakash. Students can control the movement of the Robot using a simulated touch-controlled joy-stick provided on the tablet. Simultaneously, the video stream captured by the camera mounted on the Robot, is transmitted to Aakash, which can be viewed in a window on the tablet.

Tools and Languages

Aakash tablets support C, C++, Python for programming activities. Also, SciLab is available for numerical computations and for research activities.

Purpose and Usage

IIT Bombay has planned to deploy the Aakash tablets in engineering institutions in India, with two objectives. The first is to test and enhance the effectiveness of these tablets for use in class rooms. The second is, development of new educational applications and contents on Aakash, largely through final year Research and Development projects done by BE/ME students at institutes.
