

45th STUDENT CONFERENCE (E2)  
Educational Pico and Nano Satellites (4)

Author: Mr. Sayed Umair Daimi  
College of Engineering, Pune, India, daimisu13.comp@coep.ac.in

Ms. Tanvi Katke  
College of Engineering, Pune, India, katketm13.mech@coep.ac.in

Mr. Deep Machchhar  
College of Engineering, Pune, India, deepmachchhar@gmail.com

Mr. Shardul Desai  
College of Engineering, Pune, India, desaiss13.extc@coep.ac.in

Ms. Tanaya Kolankari  
College of Engineering, Pune, India, kolankaritp14.extc@coep.ac.in

Mr. Adesh Jagtap  
College Of Engineering , Pune, India, adeshjagtap0@gmail.com

Mr. Abhishek Lolage  
College of Engineering, Pune, India, abhisheklolage@gmail.com

Mr. Gaurav Juvekar  
College of Engineering, Pune, India, gauravjuvekar@gmail.com

COEP SATELLITE INITIATIVE - MANAGEMENT PRACTICES OF A LONG TERM  
CO-CURRICULAR INTERDISCIPLINARY PROJECT**Abstract**

An undergraduate space program aims at providing hands on experience to students in the field of space technology, concurrently promoting space research at the university level. College of Engineering, Pune (COEP) Satellite Initiative (CSAT) was established in the year 2008 at COEP, with the aim of designing and fabricating small satellites. Swayam, the first mission undertaken by CSAT, has the scientific objective of demonstrating passive attitude stabilization, and provides a utility of bi-directional communication in the HAM band. The flight model of Swayam was fabricated and tested in March 2015. It was launched in June 2016, under the Indian Space Research Organization's (ISRO) Student Satellite Programme, and has successfully achieved its payload. The post launch activities of the satellite were monitored through a ground station, developed ingeniously. Even before the launch of Swayam, the team had started work on a new mission, with an aim to design and fabricate a nano-satellite with solar sails. The proposed payload of this mission is to demonstrate the use of solar sail in a small satellite to maneuver orbit, with a utility of charged particles monitoring at varying altitudes. The paper discusses the selection procedure of the selection of this mission, with emphasis on its uniqueness, novelty and its fitness for engineering students. Division of work among the team members, working simultaneously on the two missions and the ground station has been described in this paper. The team has been divided into multiple subsystems, such that each subsystem works on a logically different part of the satellite. Dividing into subsystems aids members of the team from different disciplines in direct application of their respective curriculum as none of the COEP students hail from an aerospace background. CSAT demonstrates a unique approach for students to explore, learn and practically work on space-related concepts. Long term projects such as CSAT demand continuity and knowledge transfer. This paper describes the project management techniques employed by the team, the team structure and changes in team since its inception, at the same time

describing the transition from one project to another. It also summarizes the subsystem wise tasks and the results obtained.