

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
In Orbit - Postgraduate Space Education (4)

Author: Mr. Jøran Grande
Norwegian Centre for Space-Related Education (NAROM), Norway

Mr. Roger Birkeland
Norwegian University of Science and Technology, Norway

Dr. Torfinn Lindem
University of Oslo, Norway

Dr. Rune Slanbusch
UiT The Arctic University of Norway, Norway

Mr. Torbjørn Houge
Andøya Space Center, Norway

Mr. Stian Vik Mathisen
Norwegian Centre for Space-Related Education (NAROM), Norway

Mr. Kolbjørn Dahle
Andøya Space Center, Norway

EDUCATIONAL BENEFITS AND CHALLENGES FOR THE NORWEGIAN STUDENT SATELLITE
PROGRAM

Abstract

This paper will deal with the educational benefits and challenges for the Norwegian student satellite program, ANSAT. The program has been running since 2007 and will end in 2014.

Norwegian Colleges and Universities are invited to join and build student satellites. The program is funded by the Norwegian Space Centre, The Norwegian Centre for Space-related Education, Andøya Rocket Range, the institutions and other sponsors. The University of Oslo, the Norwegian University of Science and Technology and Narvik University College are attending the program.

The paper will present the main goal and organization of the ANSAT management, the three satellite teams, and how the program is run. The three satellites are described, as well as how the different institutions deal with their local project, student organization, staff and resources. The first satellite is called HiNCube. It is carrying an imaging camera as the main payload and is ready for launch with Dnepr launcher from Yasny, Russia early 2013. The second satellite, CubeSTAR, is a space weather satellite which carries an experimental Langmuir probe for high-speed measurements of electron density in the ionosphere. Its novel technology will improve the resolution 2000-fold, from today's seven kilometers to the meter level. The third satellite, NUTS (NTNU test satellite), is developed by the Norwegian University of Science and Technology. The NUTS satellite is carrying an infra-red camera in order to take pictures of gravity waves visible in the hydroxyl layer at 90 km altitude. This satellite will also be a demonstrator on the use of composite materials as the main structure.

The paper will present the status of all three satellites, how they cooperate with each other and the industry. The lessons learned since the program started in 2007 will also be presented, especially the challenge of continuity associated with student projects running over long time periods. Currently more than 140 students has participated and produced more than 4000 ECTS from Bachelor, Master and PhD level.