

SPACE COMMUNICATIONS AND NAVIGATION SYMPOSIUM (B2)  
Fixed and Broadcast Communications (4)

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STATUS AND FUTURE OPPORTUNITIES FOR ANDØYA GROUND STATION

**Abstract**

In this paper we will present Andøya Ground Station (AGS) as an operational satellite ground station for amateur and educational satellites to be used by students and scientist. Also, the paper will discuss how the user can use it more efficiently.

AGS is a co-operation between Andøya Rocket range (ARR), the Norwegian Centre for Space-Related Education (NAROM) and the Norwegian Student Satellite Program (ANSAT).

The station can be a part of the GENSO network, when fully operational. Within the GENSO network we can provide data from roughly 12 of 14 passes per 24h for circular polar LEO orbiting satellites. It will be able to see all the passes crossing Europe.

Cooperating with student ground stations in Narvik, Trondheim and Oslo we have a great coverage over Norway and the passes that are visible from these stations.

The station have been operating since 2008 and given support for several projects such as; CanX-2 and RASAT, as well as ongoing satellite projects HiNCube, CubeSTAR and NUTS.

With the increasing number of student satellites that are being launched, this will this give AGS a good opportunity to teach the technical personnel and students so they can better support when a user of a ground station needs it.

With personnel working at ARR the response time is very short when a problem might occur.

ARR have set themselves a goal that within year 2020 they shall be able to launch microsatellites up to around 100kg in polar orbit. There would be possibilities to organize a dedicated launch vehicle for cubesats, so that the cubesats can be put in the right orbit that the universities wants. With the ground station located right next door it will be ideal for testing and integration of the satellites. Also, with the capability to receive signals from satellites 12 of 14 passes due to the station location at 69 degrees North, the station is ideal for the initial operation phase of satellites.

For educational use we plan exercises where students or pupils will try to establish contact with a satellite and if possible get some useful data from the satellite and do data analysis on this data. Using amateur satellites as voice repeaters is also a possible exercise.

For the future we will try to operate the ground station so that it is available to all students that want to have data from their satellites.