

# Launch of CubeSat “SEEDS” and the future plan

August 9th, 2006

Nihon University CubeSat Project Team

This report summarizes the launch of the CubeSat “SEEDS” at 1:34 July 27th, 2006 (local time). The CubeSat “SEEDS” which is 10cm cube, 1kg had been developed by Nihon University, College of Science and Technology, Department of Aerospace Engineering since 2001. In this launch, the rocket was supposed to deliver 14 nano-satellites including SEEDS, and 4 small or medium size satellites to the orbit. The primary satellite is BelKA , the first satellite of Belarus.

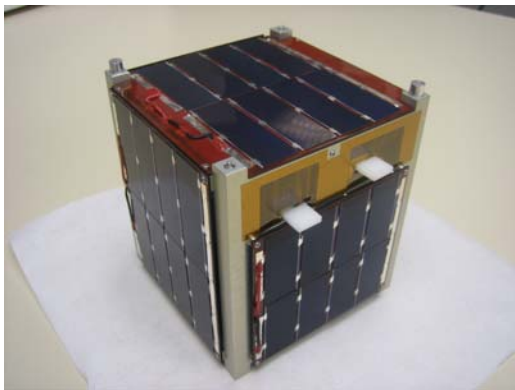


Fig.1 CubeSat “SEEDS”



Fig.3 Satellites in fairing

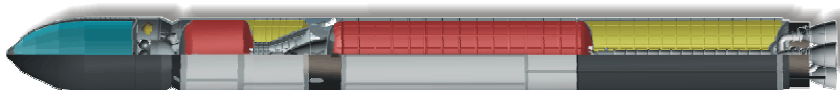


Fig.2 Launch rocket “Dnepr”

According to the Website of ISC Kosmotras Corporation, Dnepr 7th was launched from Baikonur Cosmodrome in Kazakhstan at 1:34 July 27th, 2006 (local time), but its first engine stopped at about one minute after the launch. And then Dnepr fell to 150km south from the launch site. The following pictures were taken by our university’s student who went to launch site, he said that he hadn’t noticed about the engine’s trouble in early stage. We confirmed the loss of engine’s fire after about one minute in our video movie.



Fig.4 Shortly after the launch



Fig.5 Dnepr appears from Silo



Fig.6 Rising Dnepr



Fig.7 Fire grows larger after  
a while



Fig.8 Fire gets smaller  
suddenly

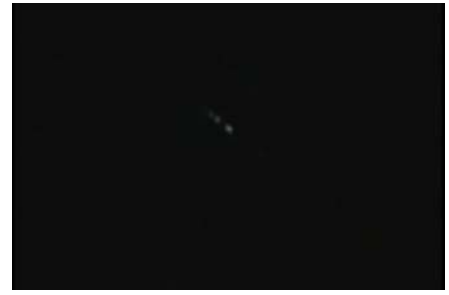


Fig.9 Burn out

Kosmotras Corporation told us that they had could get the Dnepr's telemetry data from the launch until the drop to the ground. They will publish the analyzed results in the end of August. We can't know the causes for the engine's trouble before that.

We are very sorry about the failure of the launch because we couldn't prove our effort. However, we have another "SEEDS" for backup. So we are planning to launch it in 2007 or 2008. For the success of the next launch, we have to do the following tasks. Of course, we are starting a part of it.

- (1) To get the new opportunity of the launch (2007 or 2008).
- (2) To get the temporary license of the satellite amateur radio station.
- (3) To purchase of the solar cells and mount them.
- (4) To purchase of the secondary batteries.

We will fix the minor software bugs and enhance the feature of SEEDS because we have some time by the next launch. The tasks are as follows.

- (1) Fix the minor bug of the control software.
- (2) Expand the digi-talker function (extension of the recording contents).
- (3) Add the digi-talker function (we are planning to record the SSTV signal).
- (4) Increase the number of characters in set character packet downlink function.

Finally, the launch failed. However, we have received various supports from many people, and we are graceful to their supports very much. We have developed the satellite under the technical supports by CalPoly, UNISEC, Ministry of Internal Affairs and Communications JAPAN, Kanto Bureau of Telecommunications JAPAN, JARL, JAMSAT, Musashino Electronics Co.,Ltd., Nishi Musen Kenkyusho Co.,Ltd., Sharp Corporation, and others. We try to continue the development of satellites in the face of difficulties. We will appreciate your continued support.

This is all about the result of the launch of SEEDS, and our future plan.