

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)

Education Outreach (3)

Author: Dr. Kenji Ogimoto
SOUKI Systems Co. Ltd., Japan

Ms. Tomoko Naemura
SOUKI Systems Co. Ltd., Japan

Mr. Tadayuki Mineyama
SOUKI Systems Co. Ltd., Japan

Mr. Daisuke Fukuyama
SOUKI Systems Co. Ltd., Japan

ONE STEP FURTHER INTO EDUCATIONS THROUGH SMALL AEROSPACE SYSTEMS

Abstract

The author have been working on small aerospace vehicles, such as small experiment rockets, quasi-satellites, high-tech water rockets, small unmanned aerial vehicle (UAV), rovers and so on, for the purpose of stimulating young engineers in private companies and students in engineering universities. The recent new development will be summarized in this paper. These are: 1) A new type of a small experiment rocket, which incorporates redundant mechanisms for the deployment of quasi-satellites. 2) Standard interfaces for the quasi-satellites with the rocket, will be developed so that many quasi-satellites can utilize the rocket to test their purposes. 3) A new type of an educational propulsion system may be introduced briefly. This propulsion system will be useful for the education purposes. 4) More educational missions will be demonstrated with the UAV, which is now under operation. The second topics will be the discussions to realize the cooperation among some small satellites on orbit. Probably the docking the de-docking of small satellites with each other will be discussed to realize the on-orbit servicing for small satellites. These technologies will be tried using small quasi-satellites on board small experiment rockets. Then they will be tailored to space applications. The project will aim at the system such as a re-configurable distributed robot system. In the beginning, it will be only an educational project. However, after sometime it will evolve into a real and useful system to work in space, as well as the good education tools for young system engineers and researchers in the near future.