

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
NEW WORLDS - INNOVATIVE SPACE EDUCATION AND OUTREACH (4)

Author: Mr. Wen Yuejie  
China Academy of Space Technology (CAST), China, wenyuejie@126.com

VIRTUAL SPACECRAFT DESIGN: AN EFFECTIVE TRAINING METHOD

**Abstract**

The necessary knowledge must be infused into the brains of novice designers before they undertake the challenging space projects. The design practice upon the traditional training of plain lectures can facilitate the acquisition of high level of proficiency of skills. Training technologies of virtual design are developed to improve the quality and fidelity of spacecraft training. The virtual spacecraft design projects can make the trainees expose to the realistic engineer environment, foster their interest and understanding of a complex spacecraft system such as a communication satellite. To support this contention, a training system that uses computer aided technologies has been designed to facilitate trainees to understand the principles, master the skills, accumulate the experience, and even get ready for a joint international spacecraft program. A couple of following training projects were carried out and proved that virtual spacecraft training is very effective in improving the independent design capabilities of the trainees. Virtual spacecraft project is a useful method for spacecraft training. Many intern engineers collaboratively develop a training spacecraft project with a simulated contract as the original input. To accomplish the project, they have to take advantage of many modern technologies and well-organized management, with the supervision of veteran engineers. A consulting committee from different countries can be also arranged to offer advice and review the output documentation. This paper describes the goal, process, evaluation, management, technology and lessons learned from the virtual spacecraft design training.