

SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
New Worlds - Non-Traditional Space Education and Outreach (7)

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INNOVATIVE COLLABORATIVE EDUCATIONAL PROGRAMS FOR SPACE SYSTEMS
ENGINEERS

Abstract

This year International Space Station marks its 18th year of orbiting the Planet Earth. The space agencies around the world started already collaborative research programs targeting destinations beyond the ISS, for example the Moon and Mars exploratory programs. Today new exploratory space programs are at the stage of formulation of mission statements, and finding scientific, technical and political objectives. The system engineer tasked with conceptual design of the spaceflight mission has to define technical requirements and translate the non-technical objectives and constraints of international space exploration programs into various technological aspects. New destinations for the space exploration are looking for the new technologies and new approaches that requires well trained system engineers who are familiar with modern methodologies of system engineering and gained practical hands on experience in interdisciplinary and international environment already since university level. This paper gave overview of innovative international educational summer programs for space systems engineers in Russia and in Europe. Team projects of the annual international summer workshop “Space Development: Theory and Practice” run by Bauman State Technical University since 1997 is the core element in the training of space system engineers. In nearly 20 years around 2000 students from 46 countries participated in the program. The Team projects were looking into development for space exploration of the Moon base (2008), Planet Rover to Study Mercury (2011) and Manned Mission to Mars with intermediate base on Asteroid (2014). Institute of Space Systems at the University of Stuttgart run for a number of years the Space Station Design Workshop. Samara State Aerospace University runs the summer space school “Future Space Technologies and Experiments in Space”.