

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Lift Off - Secondary Space Education (2)

Author: Dr. Vera Mayorova
Bauman Moscow State Technical University, Russian Federation

Mr. Ian Troianovskii
Bauman Moscow State Technical University, Russian Federation

**"QUANTORIUM" - MODERN EXAMPLE OF UPWARD MOBILITY FOR THE PROMOTION OF
HIGH SCHOOL STUDENTS IN AEROSPACE TECHNOLOGIES**

Abstract

The article presents a modern model of auxiliary education - children's technology parks "Quantorium" as a unique environment for the accelerated development of students in aerospace science and engineering. The distinctive features of the presented educational platform from traditional educational models are described. "Quantoriada" contest is presented as a demonstration of this educational approach – contest for engineering teams which consist of children from different countries interested in engineering and invention. The goal is to create a dynamically developing educational ecosystem that allows students to develop flexible and professional competencies. In the USA, every fifth high school student is engaged in such technoparks, in Japan - every tenth. A distinctive feature of this approach is the development of 4C competencies (communication, creativity, team approach to problem solving, critical thinking) when solving real production problems, accompanied by experienced mentors. The project has been implemented in Russia since 2015. Today in Russia there are more than 120 "Quantorium" technology parks. More than 80 thousand high school students study in these technoparks on regular basis and around 600 thousand high school students are actively participating in events and projects implemented at the sites of technoparks. Technoparks make it possible to create a reliable layer of intelligent, theoretically savvy students motivated to work in space technologies, who will work with interest, generate new ideas and create new technologies. The article describes "Quantoriade" contest of engineering teams. In 2020, the Competition was held for the first time in an online format with the support of the State Corporation Roscosmos. Participants developed an ergonomic device to improve the comfort for astronauts during long interplanetary flights. The paper outlines the content of the competition tasks, the principles of team formation, approaches to preparing participants for competitive tests. "Quantorium" educational environment contributes to the development of engineering and professional skills of high school students.