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IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
Sending out a Signal: Innovative Outreach and Communications Initiatives (7)

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FIVE STEPS TO MASTER THE MAJOR OF "SPACE ENGINEER"

Abstract

The article presents an informal innovative educational approach to the formation of a future space engineer which is being implemented at the Youth Space Center of Bauman Moscow State Technical University. The formation of interest towards the career of a Space Engineer here begins from school, capturing the process of schoolchildren's transition from primary, then secondary into higher education. Schoolchildren have access to five steps of the informal learning trajectory "My path to the engineering profession!" on the basis of the Youth Space Center of the University: Step 1: acquaintance with the Youth Space Center, the infrastructure of University research laboratories, the Mission Control Center for Small Spacecraft (MCC) (sign up for a tour, listen to elective lectures, take a master class, perform laboratory work at the MCC). Step 2: complete individual project or participate in a space research team-project (make your own satellite, rocket, design a robot, learn to work in a team). Step 3: participation with your own project in the "Step into the Future" Contest for schoolchildren in the "Engineering" profile (become a winner or a prize-winner and enter the University without additional entrance tests). Step 4: Participation in the contest for students "I am a professional!" (become a contest laureate and get the best master's program or internship at your desired space industry enterprise). Work at the University Design Bureau for breakthrough space projects and technologies. Step 5: Work as an engineer in the space industry / in a private space business / opening your own company / space Startup (continue to connect with the Youth Space Center as a leader of student team project, mentor, expert). This educational trajectory allows students to dive into the development of space missions, spacecraft design, modeling and prototyping space technologies. During this process participants learn the fundamentals of space system design along with marketing and business engineering tools with the goal of creating financially viable projects for both State-owned and private businesses. The article provides real-life examples of career development along the educational trajectory called "My path to the engineering profession!": from a school student to a space engineer, test engineer, the owner of a private space company, an astronaut.