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Enabling the Future - Developing the Space Workforce (5)

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NATIONAL CANSAT COMPETITION AS A MEANS TO DEVELOP SPACE WORKFORCE IN  
AZERBAIJAN

**Abstract**

The first CanSat team from Azerbaijan participated in Texas, US in 2016 and it was sponsored by Azercosmos within the framework of its Corporate Social Responsibility activity. The team's participation at international level created an opportunity for Azercosmos to organize the competition at national level. The paper will present the results and diverse effects of National CanSat competition in the development of the space workforce of Azerbaijan. In 2018, the first ever national CanSat competition was jointly organized by Azercosmos and the Ministry of Education. 31 teams from eleven universities of the country took part in the competition. The teams consisted mainly of students studying mechanics, electronics, computer engineering, aerodynamics, process automation, mathematics, physics and other technical specialties. Student teams had 3-6 participants and were supervised by engineers of Azercosmos. Teams aimed to build a small satellite weighing 500 grams based on the working principle of real satellites and launched it in a small rocket up to 600 m. The satellite models were evaluated based on telemetry signal reception, mapping of a certain area, determination of altitude, temperature and pressure. Since 2018 more than 400 students from 15 universities have participated at the national CanSat competition. Hands-on experience students have at the competition increased their system engineering approach and knowledge on the end-to-end life cycle of satellites from mission design to end of life. As a result, students that were merely interested in the space sector incrementally made a decision to pursue a career in the space sector. It was a game changer for Azercosmos, since it has gained 12 talented youngsters from the competitions working either as full time employees or as interns at Research and Development center. Participants of the CanSat competition are considered half ready to develop CubeSat and this competition is being used as a strategic event of the R&D center in pursuit of its goals including development of small satellites (>500 kg). The lessons learned from this competition is that every emerging space agency through hands-on activities based on space technology can achieve its goals such as capacity building, space awareness and education. In the long run it can also be linked to STEM education for inspiration and engagement of secondary school students (13-18 years olds) in the space industry. This way, soft skills such as teamwork, communication, agility and time management are fostered while enhancing the students' core knowledge on STEM subjects.