TECHNION Israel Institute of Technology

Technion Students Developed an Autonomous Aerial Reconnaissance System and Won 3rd Place in an International Competition   June 19, 2017

Prize Winning Autonomous System

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A team of students from the Technion has won 3rd place out of 54 in an International competition for the development of an unmanned aircraft for search and rescue of missing travelers. The team flew to the competition with the support of the Ministry of Science and Technology, as part of the Ministry's program for delegations of students to science competitions abroad.

Science Minister **Ofir Akunis** congratulated the team, "Our brilliant students have done it again. Israeli teams are doing exceptionally well in many international competitions and reach top placements. In doing so, we are strengthening Israel's position as a world leader in innovation. The Ministry of Science will continue to support the next generation of Israeli scientists, our outstanding researchers, and students."

Fifty-four teams of college and high school students from eight countries, including the United States, Germany, India, Turkey, Poland, Canada, and Romania, took part in the AUVSI SUAS competition, which is held annually in Maryland, USA. For the competition, which aims to encourage the development of unmanned aerial vehicles, each team must build an unmanned aerial vehicle that fulfills defined tasks. This year the competition focused on the search and rescue of a missing traveler, and aircraft that were built had to carry an autonomous aerial reconnaissance system capable of identifying objects, avoiding obstacles, and more.

The TAS (Technion Air Systems) team was comprised of 18 students from the Technion Faculty of Aerospace Engineering and Viterbi Faculty of Electrical Engineering. The team developed and manufactured two aircrafts with a wingspan of 2.9 meters, 2.1 meters in length, and weighing 12.5 kg. The students had performed analyses, simulations, tests, and ground and air experiments in order to achieve the best possible performance, and finally built the aircraft by hand.

The aircraft is capable of taking off, flying, landing automatically, manually and automatically identifying ground targets located in the search area and outside the boundaries of the sector, evading static and dynamic obstacles, dropping cargo to specific coordinates, and transmitting data in real time to the control center (the competition's judges, in this case). The aircraft has many civilian applications, such as identifying accidents and road congestion, identifying fires, patrolling oil pipelines and electricity lines, and site photography for mapping purposes.

Team advisor Dror Artzi said after the competition, "Technion is highly esteemed by all the organizers and participants in this prestigious competition."

Adi Topork, the team captain, added, "We have been receiving positive comments from the aerospace industry regarding our students' ability to develop such an aircraft in just two semesters. This is the fourth time we have participated in the competition, and every year we develop a different platform and improved systems."

The team members are Adi Topork, Imri Tsror, Jason Ben Shitrit, Sigalit Grinberg, Daniel Joseph, Ohad Marcus, Ophir Milul, Roi Yehudai, Alexander Shendar, Shani Bijio, Jenna Brunner, Emanuel Ben Shushan, Maxim Solovay, Haim Ilya Brod, Eyal Ganis, Dan Ben David, Aviv Hasson, Netanel Even Danan, and Dolev Simon. The project moderator is Dror Artzi and the project TA is Yevgeni Gutnick.