

AICS goes SPAICS

We are proud to announce that our CanSat placed 2nd in the Dutch National CanSat Competition. On April 16th, 2019, the SPAICS AEAV (@spaics_aeav) Team took 2nd place in the Dutch CanSat competition hosted by ESA, Nemo, TU Delft and Defensie! The CanSat competition consists of 34 teams of high school students from all over the Netherlands, tasked with designing, building, and testing a CanSat. What is a CanSat? A satellite that fits into a soda can! The CanSat is launched inside a rocket to a height of 1 km and must record and transmit data as it descends. Each team performs the primary missions of recording temperature and pressure every second, and choose a secondary mission. The winners of this competition would go on to represent the Netherlands in the ESA European Championships, which are being held in Italy in June.





This year we had two teams compete under the SPAICS banner (Satellite Program AICS), collaborating on a planetary exploration package. SPAICS AEAV (Autonomous Aerial Exploration Vehicle) and SPAICS ATRV (Autonomous Tracking and Relay Vehicle) worked together to complete their respective missions. ATRV's mission was to land and act as a relay station and tracker for the other CanSat, locating it based on radio frequency and GPS data. They also had a camera with terrain analysis and developed an algorithm to determine the percentage of vegetation or water in an image taken to determine terrain features. Highlights of their design included a two stage recovery system and use of dual radio transmitters to locate and track other CanSats.

AEAV's mission was ambitious and focused on aerial exploration. The CanSat would descend and deploy a quad-copter drone mid air before landing, which would fly autonomously send data to the relay station of ATRV.

After a gruelling year of designing, building testing and report writing, both teams made the top 10 and were invited to the final launch event, on 29 March at Missile Base 't Harde near Zwolle. The launches are conducted by TU Delft's Rocketry club DARE, and the 2.5m tall rocket is a sight to see! It was a fantastic day, great weather, and the prospects for two great rocket launches were in the air. ATRV had some data transmission problems during launch, so could not record data, but recovered their CanSat successfully in one piece! The second rocket launch containing 5 CanSats including team AEAVs was destroyed during launch, and the spectacular explosion was a sad sight to see. The debris of their CanSat forever available in hyperlapse slow motion. Despite the setback, the jury ensured teams that the launch would not hinder any winning prospects, and both teams worked on the final report, proving their design with tests.

At the final presentations at NEMO, both teams presented their design well, and AEAV took home the silver trophy, which adorns the display cabinet in the science hallway at the AICS. Overall it was a great year, and both teams worked hard to prove they are the future engineers of the world!