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Calling Planet Earth: Large Engagement and Communications Initiatives (6)

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ESTCUBE-2: COMMUNICATING UNCERTAINTY

Abstract

ESTCube-2 was a three-unit CubeSat developed by volunteer students under the supervision and in the laboratories provided by the University of Tartu, Tartu Observatory (UT TO). It was Estonia's fourth satellite and the largest and most technologically intensive one to date. In total, ESTCube-2 took 10 years and contributions from almost 600 students to develop. The satellite carried four main experiments: (1) the second-generation E-sail and plasma brake experiments, including electron emitters from the Technical University of Dresden; (2) a deep-space nanospacecraft platform prototype for future interplanetary missions, developed by the Estonian Student Satellite Foundation and UT TO; (3) two Earth observation cameras for vegetation monitoring, developed by UT TO, and (4) corrosion testing in space to study the corrosive behavior of materials and coatings in the low Earth orbit environment, developed by Captain Corrosion Ltd. The launch took place on the 9th of October 2023 from Kourou, French Guiana with a rocket that had 12 satellites on board, 10 of which were CubeSats. The student satellite ESTCube-2 had thousands of fans across Estonia among the team members' families and from the population who remember its predecessor the ESTCube-1 which was the first satellite of Estonia and is being remembered akin to a national treasure. The ESTCube-2 communication team had planned an extensive media campaign around the launch, including press releases, radio and TV interviews, articles on digital channels, as well as on social media. Before the launch, the news mainly covered the satellite's mission, the team, and future plans. News about the launch was covered by national TV shows and newspapers. A few days after the launch, the team started having strong suspicions that something had happened to the satellite, either during the launch or after it was deployed from the rocket. Firstly, contact with ESTCube-2 had not been established, and secondly, according to North American Aerospace Defense Command (NORAD), only 10 new space objects were detected in orbit after the launch, which either meant that two satellites were missing or that something had happened to them. Our communication had to adapt to the new reality overnight, and the team had to figure out how to communicate the worst-case scenario to partners, the media, and the general public, while not knowing exactly what had happened.