

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
In Orbit - Postgraduate Space Education (4)

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ÜBERFLIEGER - UPDATE AND LESSONS LEARNED

Abstract

Besides being a major powerhouse for space and aviation research in Europe, the German Aerospace Center (DLR) also aims to motivate young people to become the next generation of scientists, engineers and explorers. While there are plenty of DLR activities in the fields of Science, Technology, Engineering and Mathematics (STEM) education for school children, there are also programs that are dedicated to university level students. The best way to have a major impact on these students is to offer them hands-on experience, exactly the kind of programs provided by DreamUp, an American company dedicated to bringing space to classrooms and classrooms to space. In partnership, DLR and DreamUp were able to complement DLR's existing programs like STERN and REXUS/BEXUS with a new program in 2016: Überflieger. Überflieger started as a nationwide student competition to search for experiments which would utilize the unique environment onboard the International Space Station ISS. In the spring of 2017 the three winning student proposals were determined. Since then these three university teams continue to work hard building, iterating and finalizing the hardware of their experiment. All three experiments are scheduled to be launched to the ISS in the second quarter of 2018, just in time to be on station during German European Space Agency (ESA) astronaut Alexander Gerst's tenure as commander of the orbital outpost. Being part of his "Horizons" mission serves as an additional motivation to the students as does the chance to witness the launch of their hardware at the launch site. Überflieger is the first time that such an opportunity is offered to students in Europe. While being proud of this fact, the organizers also had to learn a fair share from errors that occurred. Not only can building hardware for space be challenging, but also managing the process and providing support to first-time space researchers. This paper, co-authored by DLR and DreamUp, describes the current status of the program and the lessons learned during its course. The science behind the three winning experiments will be presented in detail in three separate papers by the respective teams. These may also include first scientific results. Überflieger is made possible through a partnership with DreamUp, working in conjunction with NanoRacks, LLC and its Space Act Agreement with NASA. It is funded by the Federal Ministry for Economic Affairs and Energy based on a resolution by the German Bundestag.