

AGENCY

SOURCE CubeSat team passes Critical Design Review

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SOURCE (Stuttgart Operated University Research CubeSat for Evaluation and Education) is a 3-unit CubeSat with a mission to image meteoroids and study uncontrolled entry into Earth's atmosphere. Designed and managed by a group of students from the University of Stuttgart in Germany, it is an active participant in the third edition of ESA Academy's [Fly Your Satellite!](#) Programme.

The SOURCE team undertook a Critical Design Review (CDR) in [March 2021](#). A CDR is a vital stage of a Fly Your Satellite! mission's development, where a panel of experts evaluate the students' CubeSat design to ascertain whether it meets all the set requirements. This process reflects the approach that is adopted for standard, professional, ESA missions. During this review, issues were raised by the experts who asked for further evidence to be gathered, and so a follow-up, or "delta-CDR" was scheduled for June. This afforded the team more time to fully consolidate their design, and resolve all the points raised by the panel.

— Testing of the Engineering Model of the Power Control and Distribution Unit

The delta-CDR was held on 28 June 2021, and saw the ESA experts once again pore over SOURCE's designs. They examined the data package submitted by the students, and assessed the status of actions that had previously been flagged. The team were also challenged to demonstrate compliance of their design with Fly Your Satellite! requirements. The panel were impressed with the hard work and commitment shown by the team, and particularly noted that they had demonstrated excellent results. On condition that a few additional recommendations are implemented, the delta-CDR was declared a success.

The SOURCE students have been supported by ESA experts throughout their CDR processes. The Fly Your Satellite! programme emphasises knowledge transfer as part of its educational objective, and as such, students have frequent, direct exchanges with ESA experts, helping to enhance satellite designs and boost the chances of a mission's success.

The SOURCE team now has a green light to proceed to the next phase of their journey. They will continue with subsystems development and testing in preparation for the Manufacturing Readiness Review. This will lead to integration of the CubeSat flight model, followed by testing in ambient conditions to demonstrate its functionality. Every step takes the team closer to their dream of launching a satellite into orbit!

— An engineering model of the self-developed Power Control and Distribution Unit