

AGENCY

Fly Your Satellite! 3 Phase D Workshop gives student CubeSats a boost toward space!

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In brief

ESA Education's [Fly Your Satellite!](#) is a world-class initiative that helps university students to design, build, and fly fully-functional CubeSats into space. ESA Academy's Training and Learning Programme and the Fly Your Satellite! team have once again collaborated fruitfully, this time running the Fly Your Satellite! 3 Phase D Workshop.

In-depth

Held from 9 to 12 May 2022 at the ESA Education Centre at [ESEC-Galaxia](#), in attendance were 15 students from three CubeSat teams of the programme's third cycle:

- [SOURCE](#), University of Stuttgart (Germany);
- [SpaceDot](#), Aristotle University of Thessaloniki (Greece);
- [UCAnFly](#), University of Cadiz (Spain).

The Workshop was complementary to previous online Fly Your Satellite! Workshops organised remotely when strict travel restrictions were in place due to the COVID-19 pandemic. Its aim was to offer student teams a hands-on introduction to concepts and situations they will encounter when integrating and testing their CubeSat missions prior to launch into space.

Students were able to participate in a verification campaign end-to-end, from planning through to defining the test requirements and conditions, preparing the specifications and procedures, and finally assembling and testing the hardware. To achieve this, the teams were guided by ESA experts through a practical group project covering topics such as how to select the instrumentation required for each test; how to define the test pass/fail criteria; and how to evaluate the success of a test activity.

— University students testing at the CubeSat Support Facility

— Set-up of vibration test

Working at ESEC's CubeSat Support Facility, half of the attendees executed a Vibration Test, while the others conducted a Thermal Vacuum Test. *"For me, the days at ESEC were the most valuable time regarding our satellite,"*

said a German student from the University of Stuttgart. *"Learning about the environmental tests hands-on will have a huge impact on the quality of our project. Meeting the other teams of Fly Your Satellite! 3 rounded it off to an overall great time."*

The hardware used has been specially developed by ESA Academy to encapsulate key concepts related to Assembly, Integration & Verification in a stepped approach accessible for students with no prior experience in this area. Students soon became acquainted with standard ESA and industry approaches for the validation and verification of spacecraft. For some, this was their first time in a cleanroom!

"Gaining in-hand experience, meeting our project coordinators, and sharing ideas with students from other teams," summarised a Spanish student from the University of Cadiz. *"this is what made the Fly Your Satellite! 3 Phase D Workshop an outstanding opportunity to boost our CubeSat to space!"*

The students are now in a much stronger position to continue their CubeSat adventures, and eventually fly their satellites!

The Fly Your Satellite! programme is now expanding with two exciting new strands, providing further life-changing opportunities to students. These new opportunities are for teams at a preliminary design stage; and those that want to use the CubeSat Support Facility to verify equipment, payloads, experiments, or even entire nanosatellites before their trip to space.