

AGENCY

A step closer to launch - ESEO student satellite to enter final test phase

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Designing and launching a fully-functional satellite is the dream of many university students involved in space disciplines. The [ESA Academy](#) is helping to make this a reality with [ESEO – the European Student Earth Orbiter](#). This student-built project is about to enter its exciting final test phase, after having just concluded the vibration tests, that demonstrated that the satellite is able to withstand the harsh vibrations of launch.

In the past few years, ten student teams from different European universities have combined forces to produce essential equipment for the spacecraft, including subsystems parts, scientific or technology demonstration instrumentation, and the ground mission control support for this [micro-satellite mission, planned to fly to Low Earth Orbit](#) later this year.

Equipped with instrumentation developed by students, such as cameras to image Earth, sensors to measure radiation levels, and technologies that are being tested for use by future education satellite missions, for the participating students ESEO is a learning opportunity like no other!

Success on last key milestones – go ESEO teams!

A special moment: assembly and integration

complete.The project reached an important milestone on 28 August 2018, when the assembly integration of the ESEO spacecraft was declared complete. In this phase all the satellite's physical parts were assembled together, and all functional interconnections were checked to confirm they work as required.

— Power Distribution Unit motherboard with latching current limiters

All the ESEO equipment designed by participating universities had previously been delivered, accompanied directly by the students that designed it, to the aerospace company [SITAEL](#), in Forlì, Italy, in charge of this critical stage. It was a great moment for the students when all the pieces fitted together nicely and worked!!

Ticking another box: vibration tests overcome. On 27 September 2018 ESEO reached another key milestone, when it successfully completed the vibrations test campaign at SITAEL's premises in Mola di Bari, Italy. ESEO has now demonstrated that its design is solid enough to safely withstand the mechanical solicitations it will undergo during the rocket launch.

— Anatomy of the ESEO satellite

Next steps

Now the ESEO project has more to do: complete the last campaign of tests that will confirm that the spacecraft is able to operate in orbit.

The satellite is now travelling on a van from Italy to ESA's ESTEC site in the Netherlands. In the next couple of weeks it will undergo the so-called thermal vacuum and electromagnetic compatibility (EMC) tests. These tests should confirm that ESEO is capable of coping with the thermal environment that it will experience in orbit, and the electromagnetic conditions generated during launch preparation, during the launch itself and in orbit.

Only when all these tests are completed will ESEO be accepted to proceed to the launch campaign.

— ESEO together in one piece for testing!

"It is a reason of pride and joy to see the result of the hard work of so many university student teams guided by their professors, the commitment of so many ESA experts that