

Australian Students Prepare for French CanSat Competition



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In November, 1998 at the Japan-U.S. Science, Technology, and Space Applications Program (JUSTSAP) conference Prof. Bob Twiggs of the Stanford University Space Development Laboratory challenged JUSTSAP members to fit a functional space satellite inside a standard soft drink can, and "CanSat" was born. From this challenge arose workshops and competitions at which students from universities launch their CanSats by rocket, balloon and model aircraft and collect data as the CanSats descends by parachute with a "hang time" of up to 20 minutes simulating a low orbit pass from horizon to horizon.

Since 2009, VSSEC has been using CanSat in the *Mission to the Orbiting Space Laboratory (MOSL) program* to introduce secondary school students to the components of a satellite and to teach electronics (transducers) using the context of sensors on a satellite.



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In 2010 [Aerospace Concepts](#) and [Auspace](#) supported the development of a CanSat kit specifically for secondary school students. Thanks to this support, [Small World Communications](#) in South Australia was contracted to produce a low cost CanSat kit (OzESat). OzESat (Australia's Education Satellite) includes all the basic satellite subsystems: structure; power; sensors; CPU; and communications, in a kit that helps students develop an understanding of their interaction as they assemble it.



The sensors (temperature, humidity and pressure) on the OzESat can be tested in a laboratory setting and data fed directly into a computer for the students to process and analyse. The OzESat can be launched from a helium blimp within a school or launched on a rocket for added engagement. VSSEC is developing a curriculum-based program, which will be included in the kit, to support the teaching of satellite systems; remote sensing; satellite communication; and data

processing. These kits will be available to purchase from VSSEC mid April.

Thanks to VSSEC's membership of the International Space Education Board, Australia is able to participate in the ESA CanSat competition and the French CanSat competition. In 2011, VSSEC has nominated the King David School to represent Australia in the French CanSat competition organised jointly by the French Space Agency [CNES](#) and [Planète Sciences](#). The competition is held in late August in Biscarrose and consists of 2 phases:

1. The conception and manufacturing of the CanSat
2. The CanSat launch campaign (the CanSat will be released from a balloon at 150-m altitude and will have to accomplish a scientific or technological mission) and the formal presentation of the project and the conclusions after flight demonstration

The preliminary design review took place in Paris (Musée de l'Air et de l'Espace) on March 19th. Teams have now 2 months to complete the design of their CanSat, start realization and tests. They have to report on their project by writing a paper containing information about their team, their missions, their technical solutions and their methods for tests and calibration.



The King David team are hard at work on their project. They have assembled a talented team of students and university mentors to tackle the technical issues and a passionate team of students who will promote their activities, help with report writing and co-ordinate fundraising.

The students will use the OzESat to collect atmospheric data (temperature, pressure and humidity) during decent. They are investigating how to use a ground station (antenna) to collect and process the data and the limitations of their system. The students are also exploring how meteorologists use this information to provide weather forecasting. These highly motivated and talented students will be competing against university teams but with the help of their mentors they are looking forward to the challenge and the opportunity to meet students who share their passion.

Please contact VSSEC if your school is interested in being involved in future OzESat activities or if you would like to help the King David team reach their goals in France.