



A competition for 2nd Level Students (transition year and upwards) in association with Institutes of Technology and run by the European Space Agency (ESA), ESERO Ireland and Blackrock Castle Observatory (BCO)

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What is CanSat

A CanSat is a simulation of a real satellite, built inside an empty soft drink can

Cansat Competition

Teams of school students compete to design, build and test a mini-satellite or *CanSat*. The competition gives students a feeling of excitement and technological achievement by launching their own satellite and gives them their first practical experience of a real space project.

Your Mission ... should you choose to accept it!

1. Fit all the major subsystems found in a satellite such as power, sensors and communications in a CanSat
2. Provide a parachute to ensure the can has a gentle landing
3. Carry out scientific experiments and transmit the data to an earth based computer

Entry is open to teams of 4 to 6 second level students (Transition Year, Fifth Year and Sixth Year) per team

What help will you get

The partner Institute of Technology will support participating schools by providing access to state-of-the-art labs, technical support and industry mentors for the competing teams.

Each team and their teacher will be provided with a kit, an introduction course and on-going technical support from a dedicated technical mentor.

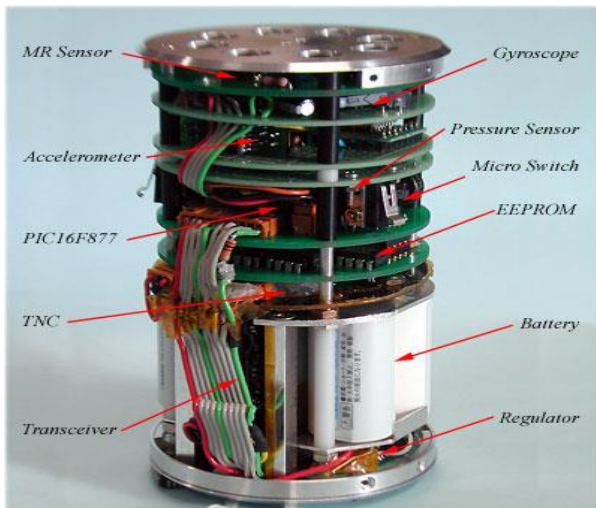
And now for the Science part

Each team develops a CanSat – Arduino based electronic circuitry housed in a soft drink can which takes measurements and transmits back to a computer.

The team is responsible for all aspects of the design, selecting the missions, integrating the components, testing, preparing for launch and then analysing the data.

The team are brought to a launch site and the CanSat is launched and released from a height. The CanSat must take measurements and transmit the data on its journey back down.





CanSat Primary Mission

After release and during descent, the CanSat shall measure the following parameters and transmit the data to the ground station (a laptop);

- Air Pressure
- Air Temperature

It must be possible for the team to collect and analyse the data and display it in a graph e.g. altitude vs time and temperature vs altitude. Teams must present their data to a judging panel.

CanSat Secondary Mission

The student must develop any secondary mission of their choice; these are just some examples:

- Advanced Telemetry – GPS location, Radiation levels, Acceleration
- Telecommand – commands transmitted to switch sensors on or off
- Landing system
- Control Mechanism – land on a fixed point target

There are seven regional partners in 2017/18. These are Athlone Institute of Technology, Cork Institute of Technology, Dublin Institute of Technology, Galway/Mayo Institute of Technology, Limerick Institute of Technology, Sligo Institute of Technology and Institute of Technology Tralee. Winners from each region will participate in the National Final in April 2018.

If you are interested in taking part please contact your regional IoT coordinator listed above.

The Irish national winner will represent Ireland in the European competition in June 2018.

CanSat is an initiative to encourage school students to consider careers in science and engineering.





Irish teams have done really well at the European competition, coming second in 2013, third in 2014 and 2016 and second in 2017.

