



2021



Table of Contents

1	INTRODUCTION.....	3
	What is a CanSat?.....	3
2	COMPETITION OVERVIEW.....	4
	CanSat Ireland Competition Phases.....	4
	CanSat Ireland Regional Partners	5
	CanSat Ireland Regional Competitions	6
	CanSat Ireland National Final	7
3	MISSION OVERVIEW	10
	The rocket launch.....	10
	Primary and Secondary CanSat Ireland missions.....	11
	CanSat requirements.....	13
4	EVALUATION AND SCORING	14
	Technical achievement.....	14
	Scientific Value.....	15
	Professional Competencies	15
	Communications/Outreach.....	15
	Marking scheme.....	16
5	FUNDING.....	16
6	CONTACT.....	16



1 INTRODUCTION

The European Space Agency (ESA) endorses and supports a range of CanSat activities across its Member States (including Canada, Latvia, Slovenia and Malta), all leading to a European final event – the European CanSat Competition. The CanSat project, aimed at secondary school students, mainly addresses Technology, Physics, and programming curricular subjects. By offering the practical experience of working on a small-scale space project, CanSat makes use of these subjects in an interdisciplinary manner, and promotes collaboration and teamwork.

ESERO Ireland (www.esero.ie) has managed the CanSat Ireland competition since 2012 and in conjunction with CIT Blackrock Castle Observatory (www.bco.ie) will run the competition again for 2021.

CanSat Ireland regional competitions will be run virtually by the third level college partners in March 2021.

The CanSat Ireland national final will take place on 29/30 April 2021. It is yet to be decided whether the national final will be a virtual or face to face event. This will be decided by COVID-19 national guidelines nearer to the event.

The winner of the CanSat Ireland national Competition goes on to represent Ireland in the European CanSat Competition in June 2021.¹

What is a CanSat?

A CanSat is a simulation of a real satellite, integrated within the volume and shape of a soft drinks can. The challenge for the students is to fit all the major subsystems found in a satellite, such as power, sensors and a communication system, into this minimal volume. The CanSat is then launched by a rocket up to an altitude of approximately one kilometre, or dropped from a platform, drone or captive balloon. Then its mission begins. This involves carrying out a scientific experiment and/or a technology demonstration, achieving a safe landing, and analysing the data collected.

Educational value of the CanSat project

Through the CanSat project, the participating student teams experience all the phases of a real space project, from selecting the mission objectives, designing their CanSat, integrating the components, testing the system, preparing for launch, and analysing the scientific data obtained. Throughout this process the students:

- learn by doing.
- get acquainted with the inquiry-based methodology that is typical of real-life scientific and technical professions.
- acquire and/or reinforce fundamental Technology, Physics, and programming curricular concepts.
- understand the importance of coordination and teamwork.

enhance their communication skills

¹ Depending on COVID-19 restrictions the 2021 European competition may not take place and in any case, students will not travel to the competition in 2021.





Coláiste Chiaráin CanSat Team, Croom, Co Limerick, winners of the 2020 CanSat Ireland Competition.

2 COMPETITION OVERVIEW

CanSat Ireland Competition Phases

The 2021 CanSat Ireland Competition will consist of 5 phases:

- Phase 1 – Launch of the CanSat Ireland Competition (January 2021).
- Phase 2 – CanSat Ireland Regional Teachers & Mentors workshops & student classes.
- Phase 3 – CanSat Ireland regional competitions (March 2021).
- Phase 4 – Winners of the CanSat Ireland regional competitions prepare for the CanSat Ireland national final.
- Phase 5 – CanSat Ireland national final (April 29th and 30th 2021).

The winners of the CanSat Ireland competition go on to represent Ireland at the European CanSat competition in June 2021 subject to the European competition taking place.

Overview of competition Timeline:

CanSat Ireland competition dates	
Activity	Date
Launch of CanSat Ireland	January 2020
Contact schools about participation	December 2020
Kits sent to schools	January 2021
Regional competitions	Week commencing March 22 nd 2021
Critical Design Review report submission	April 22 nd 2021
National final	April 29 th & 30 th 2021



CanSat Ireland Regional Partners

The CanSat Ireland competition is run in partnership with 8 third level colleges:

- Athlone Institute of Technology (AIT),
- Institute of Technology Carlow (IT Carlow)
- Limerick Institute of Technology (LIT),
- Munster Technology University (CIT)
- Munster Technological University (ITT)
- Sligo Institute of Technology, (ITS)
- Technological University of Dublin (Grangegorman Campus)
- Waterford Institute of Technology

Each third level college launches their CanSat Ireland regional competition with a Teachers & Mentors workshop in January 2021. A teacher information session will be held for all interested teachers on January 12th 2021 at 7pm using the Zoom platform. Teachers should register through the <https://esero.ie/cansat/> website.

- CanSat Ireland teams should comprise a **minimum** of **4** and a **maximum** of **6** (TY/Senior cycle) full-time enrolled secondary school students assisted by a teacher. Teams of 4/5 students are advisable to maximise the learning process.
- Team members can only be part of **1** team per year.
- It is prohibited for a team to participate in the European CanSat Competition more than once, with the exception of the teacher/mentor and up to one student from any former team.
- It is not allowed for an unregistered person to attend the competition.
- CanSat teams may substitute a maximum of one person on the team if necessary, as long as the new member has not been part of another CanSat team in the same year. The total number of the team must not exceed 6 including the substitute.
- At least 50% of the team members must hold the nationality of an ESA Member State² or an ESA Associate State.
- One teacher/mentor can be responsible for one team per year only.
- The national final winning team must be able to participate in the European CanSat Competition in June 2021
- Any national final winning team or team member cannot enter the competition more than once.³
- Each team must complete the online registration form prior to the regional competition to ensure compliance and be granted permission to enter the competition.

² ESA Member States in 2020: Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland, United Kingdom. In the framework of the current collaboration agreement between ESA and the Republic of Malta, teams from Malta can also participate in the European CanSat Competition as guest competitors. Teams from other countries may also participate in the European CanSat Competition as guest competitors if approved by ESA

³ An exception will be made to this rule in 2021 when the CanSat Ireland 2020 winners will be allowed to participate in the 2021 national final, subject to them meeting the participation criteria.



CanSat Ireland Regional Competitions

Scientists and engineers from the partnering Institutes of Technologies, and from local companies are assigned to CanSat Ireland teams/school as mentors for the competition.

From January 2021, under the supervision of the regional partners, the student teams carry out technical work on their CanSats and engage in outreach activities.

The CanSat Ireland teams should perform the following tasks:

- Selection of mission objectives.
- Definition of technical requirements necessary to achieve the objectives.
- Design of CanSat hardware and software.
- Integration and testing of the CanSat,
- Regional launch campaign: Technical & Communications work.

Regional CanSat Ireland competitions are scheduled to take place during March 2021.

Schedule of CanSat Ireland regional competitions:

Dates will be posted at <https://esero.ie/cansat/> as they are confirmed with each host college.

For CanSat Ireland regional competitions, CanSat teams should first focus on the Primary Mission which it is **mandatory** to attempt. Teams which focus on secondary missions before mastering primary missions at regional competitions will be at a disadvantage. Teams should allocate work between team members to ensure participation by all team members.

While certain elements of the competition will not be graded at regional level it is advisable that teams design their CanSat with the national final in mind. For instance, at the CanSat Ireland national competition each CanSat may perform a controlled ascent and descent via quad/octocopter/rocket in the event of a face-to-face competition. The CanSat **must** be fitted with an eye bolt to allow it to be tethered to a drone at the national final competition. Parachutes will not be required at the regional competition but will be required at the national and European finals, so work on their design should be undertaken and demonstrated.

Teams are expected to demonstrate that their CanSat can record live data which should be saved to a removable, memory card. Data should be recorded at least once every second.

In lieu of the CanSat launch that would ordinarily occur at a face-to-face regional competition, teams are recommended to record data in advance of the regional competition by dropping their CanSat from a height or moving it between two areas with different values in the recorded variables (i.e. from an area of high pressure to low pressure, or from a cold area to a warm area). After analysing their data, the CanSat teams will make a 10 mins. presentation to a judging panel, 2 minutes of which should be a pre-recorded video presentation which must demonstrate that the CanSat is operational. In the event of a virtual regional competition the inclusion of this video, demonstrating a working CanSat, is **mandatory**. A further 10 minutes per team will be allocated for Q & A. Teams will be expected to present and explain properly **labelled** graphs of the data received from their CanSat tests.



Qualification to national final

If there are 7 or more teams participating in the CanSat Ireland regional competition (i.e. teams that meet all criteria and make a presentation to the judging panel) then two teams from that region will qualify for the CanSat Ireland national final. For regions with 6 or fewer teams competing in the regional final 1 team will qualify for the national final.

For a team to proceed from regional competition to the CanSat Ireland national final, a minimum of three teams must participate in the regional competition i.e. meet the team criteria and present to judging panel.

CanSat Ireland National Final

Due to potential COVID-19 related restrictions, 1 of 2 eventualities will proceed:

1. An Online /Virtual Final:

Should COVID-19 mitigation measures prohibit the hosting of a face-to-face national final, a virtual (online) final will take place on April 29th. The format will be the same as for regional (virtual) competitions with two minor adjustments as follows.

- a. Teams will be required to present on their project for 10 minutes, 2 minutes of which must include a pre-recorded video demonstrating a working CanSat. Judges will then be afforded 15 minutes to question the team on their presentation.
- b. Teams are expected to expand on their regional competition presentation to include a focus on the secondary mission.

2. A Face-to-Face Final: In the event that a face-to-face national final can proceed, the CanSat Ireland national final will take place April 29th and 30th 2021 at Emo Court Portlaoise (launches on April 29th) and Killeshin Hotel, Portlaoise (presentations on April 30th). Venues to be confirmed.

Between March and April 2020, (i.e. after regional competitions and prior to national final) under the supervision of the mentors, the qualifying teams will carry out technical work on their CanSats applying the procedures used in the typical lifecycle of a real space project, which are:

- Selection of mission objectives.
- Definition of technical requirements necessary to achieve these objectives.
- Design of hardware and software.
- Design of ground station/ground telecommunication system.
- Documented Design Reviews, leading to design refinement.
- Integration and testing of the CanSat.
- Reporting

At the CanSat Ireland national final each CanSat will be launched by drone, and rocket (TBC) and will undergo a controlled descent. To accommodate both eventualities, the CanSat should be fitted with both an eyehole bolt and a parachute attachment. The parachute **must** fit within the available volume that extends 4.5 cm along the CanSat's radial axis (Height). Parachutes that fail to fit within the allocated volume will not be able to launch.



Similar to the regional competitions, each team must analyse their launch data and make a 10-minute presentation with appropriate **labelled** graphs to a judging panel. A further 15 minutes will be allocated per team for judges Q & A.

The judges will evaluate the CanSat Ireland teams based on their preparedness for the European CanSat competition as well as all their technical, educational, scientific, professional competencies and communications work. Teams competing in the CanSat Ireland national final will be asked to submit a Critical Design Review (CDR) report in advance of the national final.

What is the Critical Design Review (CDR) report?

The CDR report is a technical document that ensures that the design can meet the stated performance requirements, taking into account all the system constraints. Compiling the CDR report allows student teams to evaluate the detailed design effort, determine readiness for hardware fabrication and for software coding, and establish the final configuration of the secondary mission.

The CanSat CDR report must contain:

- A demonstration that all the requirements stated in the guidelines of European CanSat Competition have been fulfilled.
- Selection of Mission Objectives
- Definition of technical requirements necessary to achieve these objectives
- The design specifications needed to fulfil the secondary mission
- Results of the completed requirements verification tests
- Summary of all work done to date (progress report)
- Description of CanSat mission, system and functionalities.
- Detailed budget.
- Outline of project schedule.

The CDR report must be submitted to rob.osullivan@bco.ie no later than 5pm on the 22nd April 2021, with the name of the team and of the document submitted clearly written in the subject line (e.g. "Team A_ CanSAT CDR report"). The document should be attached in a pdf format with the following file name format: *teamA_cansat CDR report.pdf*.

The CanSat Ireland national winning team will get feedback on this CDR which will form the basis of the Pre-Launch Report which must be submitted to ESA by 31st May 2021 for the European CanSat Competition

European CanSat Competition

All teams participating in the European CanSat Competition 2020-21 Launch Campaign will need to submit the **Pre-Launch Report (PLR)**. This document is a 20-page document, including appendices*, that summarises all the work done and the progress made. It should provide a full description of the CanSat mission, system and functionalities, and indicate the steps, rationale and troubleshooting which was needed to achieve the CanSat refined design, as well as a detailed budget. This document should accurately record all the details of the completed CanSat prototype. This will be the main document provided to the jury members before the European launch campaign, who will then be tasked with evaluating the quality of the report, as well as the work and performance of each team.



NOTE: – The teams will be asked to submit a ‘User Operations Manual’ as an Annex to the PLR for ESA to effectively operate and launch their CanSat. More information will be given in the months prior to the document submission (deadline TBC).

The PLR must be submitted to ESA in PDF by 31 May 2021, 22:00 CET, written in English in Verdana font, size 11 at cansat@esa.int with the name of the team and name of the document submitted written in the subject line (e.g. “Team X Pre-Launch Report”). The document attached should have the following file name format: TeamX_PreLaunchReport.pdf.

If a team submits a PLR that exceeds the 20-page limit, ESA will request that the team re-submits the report to be within this limit, or else will disqualify the report from being judged.

After the European CanSat Competition 2020-21 launch campaign, the teams will be requested to prepare and submit their **CanSat Final Report (CFR)**, written in English in Verdana font, size 11, which follows the standards of a scientific paper, including an abstract and details of the whole project. The report should be limited to a **maximum of 25 pages including any appendices** and must summarise the work done before, during, and after the launch campaign, with a special focus on the results obtained and the (scientific/engineering/ technical) conclusions. Only after submission of the CFR will the members of the teams receive an ESA certificate recognising their participation in the European CanSat Competition 2020-21.

The CFR has to be submitted to ESA at cansat@esa.int by 31 July 2021, 22:00 CET, stating the name of the team and name of the document submitted in the subject line (e.g. “Team X Cansat Final Report”). The document should be sent as a PDF, using the following file name format: TeamX_CansatFinalReport.pdf.

ESA will provide guidelines as well as templates for the required reports to each participating team. The template for the CFR will be provided to each team as a Word document but teams may choose a different text editor if they wish e.g LaTeX. However, please consider that the formatting requirements must still be adhered to: the font, font size and page limits specified above. The final version must be sent to ESA in PDF.

*Appendices should only include extra information that helps the reader to understand the report, but that is too bulky to fit in the main report. For example: snippets of code, brief extracts of information from a manufacturer’s data sheet, content and data from literature/ research or any other information that would complement the main report. Teams do not need to write appendices but if they are used, they should be short



3 MISSION OVERVIEW

The CanSat Ireland competition is designed to simulate all aspects of a real satellite mission, including design, development, testing, launch, operations, and data analysis, by means of teamwork.

The rocket launch

A model rocket may launch the CanSats at the national and European final. CanSat design should adhere to the dimensions below.

Rockets used for CanSat launches can vary in capacity and specifications. Some of these rockets can launch up to 20 CanSats at a time.

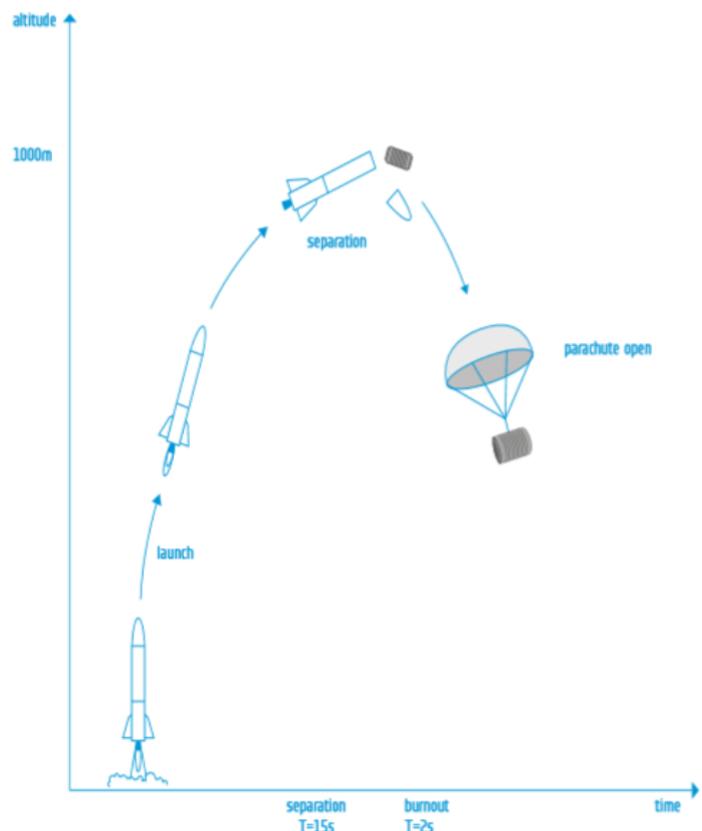
Mass:	3 kg
Length:	1.5 m
Diameter:	79.4 mm
Apogee:	approx. 1000 m
Flight time:	approx. 120 s
Propellant mass:	280 g

The rocket would deploy its parachute at apogee, which is reached at around 15 seconds after take-off, together with the two/three CanSats. Just after the apogee (0 – 2 seconds later), the CanSats would separate from the rocket and descend individually with their own parachutes. The CanSats are usually found within 1 km of the launch site. However, recovery of the CanSats cannot be guaranteed.

During the flight, the rocket can reach a maximum acceleration of 20g (i.e. approx. 20 m/s² in the vertical direction and a maximum velocity of 550 km/h.

Drone Launch:

At the CanSat Ireland national final CanSats will undergo a controlled ascent/descent via drone and potentially a launch via rocket (TBC). The CanSat specifications remain the same as for Europe.



Primary and Secondary CanSat Ireland missions

Primary mission

The team must build a CanSat and program it to accomplish the following compulsory primary mission:

To measure, on ascent and during descent, the following parameters:

- Air temperature
- Air pressure

Temperature and pressure data should be saved on-board at least once every second

During the post-flight analysis, it must be possible for the team to analyse the data obtained (for example, make a calculation of altitude) and display it in **labelled** graphs (for example, altitude vs. time and temperature vs. altitude).

The primary mission must take priority over secondary missions. Failure to complete the primary mission will incur a significant penalty from the judging panel.

Secondary mission

The secondary mission of the CanSat must be selected by the team. Teams can take ideas from real satellite missions, or collect scientific data for a specific project, make a technology demonstration for a student-designed component, or any other mission that would fit inside the CanSat and show its capabilities.

Teams should brainstorm their own mission objectives, ideas and constraints in order to try to define their mission. The student teams are free to design a mission of their choice, as long as they can demonstrate it to have some scientific, technological or innovative value. Teams should also keep in mind the limitations and requirements of the CanSat mission, and consider the feasibility (both technical and administrative in terms of time and budget) of their chosen mission.

Teams are invited to take inspiration from ESA's missions for designing their own secondary missions, which could form the basis of a real space mission

Some secondary mission examples:

1. **Advanced telemetry:** After release and during descent, the CanSat measures and transmits additional telemetry to that required for the primary mission, for example:
 - Acceleration
 - GPS location
 - Radiation levels
2. **Telecommand:** During descent, commands are sent from the ground to the CanSat to perform an action, such as switching a sensor on and off, changing the frequency of measurements, etc.
3. **Targeted landing:** The CanSat navigates autonomously with a control mechanism that controls a parafoil, for instance. The objective is for the CanSat to land as close as possible to a fixed target



point on the ground after it has been released from the rocket. This mission is an advanced telemetry/telecommand mission.

4. **Landing system:** For this mission, an alternative safe landing system for the CanSat would be deployed, such as a bespoke parachute or airbag.
5. **Planetary probe:** A CanSat can simulate an exploration flight to a new planet, taking measurements on the ground after landing. Teams should define their exploration mission and identify the parameters necessary to accomplish it (e.g. pressure, temperature, samples of the terrain, humidity, etc.).



A selection of CanSats with their accompanying parachutes from a European CanSat Final

CanSat requirements

The CanSat hardware and mission must be designed following these requirements and constraints

- [1] **All the components of the CanSat must fit inside a standard soft drink can (115 mm height and 66 mm diameter)**, with the exception of the parachute. Radio antennas and GPS antennas can be mounted externally on the top or bottom of the can, depending on the design, but not on the sides.
N.B. **In the event of a rocket launch the rocket payload area has 4.5 cm of space available per CanSat, along the can's axial dimension (i.e. height), which must accommodate all external elements including: parachute, parachute attachment hardware, and any antennas.**
- [2] The antennas, transducers and other elements of the CanSat **cannot** extend beyond the can's diameter until it has left the launch vehicle.
- [3] The mass of the CanSat must be between 300 grams and 350 grams. CanSats that are lighter must have additional ballast fitted to reach the 300 grams minimum mass limit required.
- [4] Explosives, detonators, pyrotechnics, and flammable or dangerous materials are strictly forbidden. All materials used must be safe for the personnel, the equipment and the environment. Material Safety Data Sheets (MSDS) will be requested in case of doubt.
- [5] The CanSat must be powered by a battery and/or solar panels. It must be possible for the systems to be switched on for four continuous hours.
- [6] **The battery must be easily accessible in case it has to be replaced/recharged.**
- [7] **The CanSat must have an easily accessible master power switch.**
- [8] Inclusion of a retrieval system (beeper, radio beacon, GPS, etc.) is recommended. For the European final a loud beeper is a mandatory component. A visual indicator that the CanSat is powered on is also mandatory for the European competition.
- [9] For national final the CanSat should have a recovery system, such as a parachute, capable of being reused after launch. It is recommended to use bright coloured fabric, which will facilitate recovery of the CanSat after landing.
- [10] The parachute connection must be able to withstand up to 500 N of force. The strength of the parachute must be tested, to give confidence that the system will operate nominally. Test results are required for the Pre-Launch Report.
- [11] For recovery reasons, a maximum flight time of 120 seconds is recommended. If attempting a directed landing, then a maximum of 170 seconds flight time is recommended.
- [12] A descent rate between 8 and 11 m/s is recommended for recovery reasons. However, the CanSat's descent speed must not be lower than 5 m/s or higher than 12 m/s for safety reasons. Additionally, the airfield or weather conditions might determine additional



mandatory restrictions on the velocity.

- [13] The CanSat must be able to withstand an acceleration of up to 20 g. Test results are required for the Pre-Launch Report.
- [14] The total budget of the final CanSat model should not exceed €500. The kit as supplied is valued at €125. Ground Stations (GS) and any related non-flying item will not be considered in the budget. More information regarding the penalties in case of exceeding the stated budget can be found in the next section.
- [15] In case of sponsorship, all the items obtained should be specified in the budget with the corresponding costs on the market at that moment.
- [16] The assigned frequency must be respected by all teams in the national launch campaign. The range of allowed frequencies changes depending on the country where the event is hosted and will be communicated in due time. It is recommended that teams pay attention to the design of the CanSat in terms of hardware integration and interconnection, so the radio frequency can be easily modified if necessary. **Teams must be able to demonstrate compliance in real time**
- [17] The CanSat must be flight-ready upon arrival to the launch campaign. **Delays to the schedule will not be permitted to ensure that all teams are afforded fair time for a launch window and to ensure fairness in respect of other team's energy availability.** A final technical inspection of the CanSats will be done by authorised personnel before launch.
- [18] **At finals, teachers/mentors must remain in a designated observation area and may not assist competitors in the field**

4 EVALUATION AND SCORING

For CanSat Ireland regional and national competitions, teams will be evaluated using similar criteria used during the European CanSat competition. The decision of the judging panel at regional and national competitions is final.

Scoring

Performance in the following areas will be evaluated

Technical achievement

The Jury will take into account how the teams obtained the results, how reliable and robust the CanSat was, and how the CanSat performed. Innovative aspects of the project will be judged (e.g. the tools selected, and the hardware/software used).

The aspects evaluated will be:

- Mission's technical complexity: The CanSat's technical level, understanding of the technical concepts and the originality of the engineering aspects of the mission.



- Performance of the Primary mission: The CanSat's technical performance in terms of deployment and data collection for the Primary Mission.
- Performance of the Secondary mission: The CanSat's technical performance in terms of deployment and data collection for the Secondary Mission (national finals only).

Scientific Value

The scientific value of the teams' missions and the teams' scientific skills will be evaluated. This includes the scientific relevance of the mission, the quality of the technical reporting (both written and oral) and the team's scientific understanding that will be assessed from the team's ability to analyse and interpret results appropriately.

The aspects evaluated will be:

- **Scientific relevance:** Assessment of whether measurements are done with a clear and well-founded scientific purpose, the extent to which the CanSat is used in an original way and if the data collection is appropriate for reaching the objective.
- **Scientific understanding:** Level of understanding of the scientific principles that underlie the project.
- **Technical reporting:** Ability to summarise with clarity and provide a readable and complete Pre-Launch report, the proper labelling of the graphs and use of the correct units and the ability to present scientifically sound data and interpretations during the launch campaign (national final only).

Professional Competencies

The Jury will assess the team's collaboration and coordination, adaptability and communication skills. The aspects evaluated will be:

- **Teamwork:** Collaborative effort of the team in order to complete the tasks in the most effective and efficient way.
- **Adaptability:** Attitude towards continual improvement and ability to adapt to new conditions, both from the regional competition towards the national final (if applicable) and/or as far as ideas for improvement ahead of the European Competition are concerned.
- **Communication: Oral presentation skills,** the ability to provide a captivating presentation involving confident speaking skills and a visually appealing presentation.

Communications/Outreach

As with all space missions the CanSat mission will require a supporting communications plan which will identify a target audience (e.g. school, local community, local industry/businesses, local primary schools, parents, peers etc) and a strategy for reaching these audiences. A combination of traditional/social media may be used. Web pages, blogs, presentations, promotional material, competitions, and media coverage will be considered.



Marking scheme

The overall balance between the above items to be evaluated is as shown in the table.

1. Technical achievement	35%
2. Scientific value	35%
3. Professional competencies	20%
4. Communications/Outreach	10%
TOTAL	100%

Penalties

Teams' final scores will be penalised in the event of late submission of the CanSat Pre-Launch Report. Similarly, penalties will be applied to teams that exceed the CanSat Ireland budget of €500. Note, the kit as supplied is worth €125 leaving a balance of €375 for the team's maximum budget.

5 FUNDING

Should a CanSat Ireland national final 2021 proceed in a face-to-face setting, accommodation and food costs will be covered for a maximum of six students and one teacher per participating team.

Teams are responsible for obtaining alternative sponsorship for any additional CanSat hardware (beyond the kit supplied), as well as the team's travel expenses to and from the CanSat Ireland national final which will be held in Emo Court (launches) and Killeshin Hotel, Portlaoise (presentations).

6 CONTACT

All questions and expressions of interest should be directed to one of the following:

Stephanie O'Neill, ESERO Ireland Manager; Science Foundation Ireland, Wilton Park House, Wilton Place, Dublin 2. Email: stephanie.oneill@sfi.ie Phone: 01 607 3014	Rob O' Sullivan, Project Manager for CanSat 2021 Blackrock Castle Observatory Blackrock, Cork, Ireland. Email: rob.osullivan@bco.ie Phone: 021 432 6123
--	--



More information

ESERO Ireland <http://esero.ie/>

ESA Education CanSat Portal <http://www.esa.int/Education/CanSat>

Social Media:

Facebook: [@CanSatIreland](#)

Twitter: [@Esero_ie](#)

[#CanSatIrl2021](#)

