Partner Guidelines

2019

CanSat Ireland – Partner Guidelines

Project Intro

The European Space Agency (ESA) endorses and supports a range of education activities across its Member States. The CanSat Ireland project, aimed at secondary school students, gives students opportunities to learn skills in electronics, sensors, programming/coding, radio telemetry, mechanical design, parachute design, problem solving, teamwork, and communications & outreach.

ESERO Ireland (www.esero.ie) has managed the CanSat Ireland competition since 2012 and currently in conjunction with the National Point of Contact (PoC), CIT Blackrock Castle Observatory (BCO), manages the competition in Ireland.

To-date 7 Institutes of Technology have participated as third level project partners which have recruited and trained teams as well as managed regional competitions.

The winner of the CanSat Ireland National Competition will represent Ireland in the European CanSat Competition.

This document will describe the agreed role of any project partner which participates in the CanSat Ireland competition.

Third Level Partners

CanSat Ireland is run regionally in partnership with third level colleges. There are 8 IoT's involved in CanSat Ireland 2019 competition:

- Athlone Institute of Technology (AIT)
- Institute of Technology Blanchardstown (IT Blanchardstown)
- Cork Institute of Technology (CIT)
- Dublin Institute of Technology (DIT)
- Limerick Institute of Technology (LIT)
- Sligo Institute of Technology (IT Sligo)
- Institute of Technology Tallaght (IT Tallaght)
- Institute of Technology Tralee (IT Tralee)

Membership is welcome from any third level college (subject to terms and conditions and budget). All third level partners which participate in the CanSat Ireland project should agree to the terms and responsibilities as set out in the document.

The Project

The primary role of the colleges is to recruit teams from second level schools, and then to offer the relevant training and support which includes mentoring, and liaising with, local school teams throughout the competition. This includes facilitating and delivering a number of workshops where the students can become familiar with the various elements of the project.

The CanSat Ireland experience provides the participating teams the opportunity to go through all the phases typical of a real satellite project, from selecting the mission objectives, designing the

CanSat, integrating the components, testing the system, preparing for launch and then analysing the scientific data obtained. Through this process the students:

- Learn by doing
- Get acquainted with the inquiry-based methodology typical of real-life scientific and technical work
- Acquire and/or reinforce senior cycle curricular concepts in STEM subjects
- Understand the importance of coordination and teamwork
- Enhance their communication skills

The third level mentors should assist the teams throughout the project to help the students achieve the goals set out above.

Benefits of participating in CanSat Ireland for a third level college

- Building relationship with secondary schools and their teachers. This in turn gives the teachers knowledge of the college to share with the wider student body
- Teachers develop relationships with the college lecturers and have contact to college expertise if it's required outside of CanSat Ireland.
- Opportunity to build relationship with local industry which may lead to other projects.
- CanSat Ireland may fill a Corporate Social Responsibility for the college with local community.
- Supports awareness of physics in the face of low numbers of physics students/teachers
- There is an opportunity to track long term impact of earlier CanSat Ireland participants; where are they now?
- PR Opportunity for the colleges including less corporate visuals.

Benefits to the school and student teams

- The competition serves as a showcase for the school's teaching competencies
- The project promotes inter-class education, where the CanSat Ireland participants are encouraged to deliver presentations to their younger peers
- Community engagement – Students are encouraged to deliver presentations to local community groups and to engage with local media
- CanSat Ireland offers a real-world teaching environment, bringing classroom theory to a practical application
- Students are exposed to industry standards in the associated skillsets, and get direct feedback from industry leaders/potential employers early in their career development
- Student develop strong communication and presentation skills
- Develops collective problem solving
- Students are given a degree of responsibility and independence
- CanSat Ireland is an interdisciplinary project, bringing subjects that are generally taught in isolation together in a practical and meaningful learning experience
- Students report increased self-confidence and strong leadership skills
- Students find it rewarding to see their work culminating in a launch at a regional/national final

- Students report increased proficiency in STEM subjects
- Increased awareness of space industry careers in Ireland
- Increased receptiveness to pursuing STEM courses/careers
- Students may receive mentorship from competition sponsors
- Provides teachers with a practical application by which to facilitate learning
- Continuous Professional Development opportunities for the teachers
- Participation helps students in making CAO choice

ESERO Ireland Role

- Liaise with ESA on all matters relating to CanSat Ireland
- Purchase of the CanSat kits
- Sign off on the CanSat Ireland Guidelines
- Sign off on the Partner Guidelines
- Procurement of National Point of Contact.
- Sign off on all publicity items
- Procurement of the Rocket (and Drones if required)
- Overall responsibility for the CanSat Ireland National Final
- Provide certificates for students

National Point of Contact Role

CIT Blackrock Castle Observatory (BCO), In consultation with ESERO Ireland, will:

- Update CanSat Ireland rules and regulations to reflect current ESA guidelines
- Continue to update to reflect dates for regional finals etc.
- Ensure all participants qualify under the rules and each school sticks to the rules
- Order the CanSat Kits
- Liaise with supplier to ensure CanSat kits are delivered and contain all necessary guidelines and manuals
- Maintain communication channels with third level partners
- Organise dates for regional competitions
- Communicate the details surrounding training dates to relevant partners
- Drone operations
- Responsible for collating reporting/feedback from national and regional competitions
- Responsible for generating national media coverage, and providing third level partners with draft press releases to facilitate local media coverage.
- Responsible for any financial income and expenditure as per the contract that Cosmos Education CLG holds with Science Foundation Ireland for the coordination of the CanSat Ireland Project 2019
- Oversee CanSat Ireland National Finals
    - -Secure dates for National Finals
    - -Secure rocket providers/operators

-Secure a launch location
-Select and coordinate a panel of judges
-Communicate with teams regarding the national final
-Book hotels rooms etc. for participants in the national final

Third Level Partner Role

The project is launched annually during Space Week, which is the first week in October. At that point the third level partner will contact local schools, ascertain the number of teams participating and inform the national PoC. CanSat kits and instructions will then be sent out for commencement of the project and the first mentoring/training session.

The team eligibility guidelines are set by ESA on an annual basis and incorporated into a national guideline document. In order for a team to enter the regional/national finals the following conditions must be fulfilled (these guidelines may alter annually):

- 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.
- CanSat Ireland 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 Ireland 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 State 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 attend the European CanSat Competition in June 2019
- Any National Final winning team or team member cannot enter the competition more than once.
- Each team must complete the registration form prior to the regional final to ensure compliance and be granted permission to enter the final. The college is responsible for getting the application from the attending teams with consideration to consent for GDPR and publicity (Appendix III and IV).

In addition, all third level partners will:

1. Host a number of training sessions for the teams so that they become familiar with the technical and non-technical aspects of the project and maintain a record of the training sessions which is required for ESA reporting. A template is provided. (Appendix I)
2. Ensure all participants complete the pre-participation evaluation survey on applying to participate, and ensure all participants complete the post-participation evaluation questionnaire before commencement of the regional final (Appendix II)
3. Share the CanSat Ireland guidelines with all participating teams, including technical and non-technical elements of the project
4. Liaise with CIT Blackrock Castle Observatory (BCO), the national PoC, regularly on the teams, attendances and number of training sessions.

5. Ensure that the teams are compliant with the eligibility criteria as set out in the National/European guidelines (as above).
6. Confirm adherence to the requirements of the Children First Act 2015 ("**CFA**") and the National Guidance for the Protection and Welfare of Children, 2017 ("Children First Guidance, 2017") developed by the Department of Children and Youth Affairs including any necessary garda vetting.

7. Liaise with the teams and organise the regional competition dates and event. This includes:
   - ✓ organising judges
   - ✓ facilitating the teams communications with schools
   - ✓ securing an appropriate launch and drop zone site
   - ✓ organising the drop mechanism (i.e. drone etc)
   - ✓ organising light refreshments for the participants
   - ✓ securing a venue for the teams to present and the judges to deliberate
   - ✓ Perform impact evaluations at regional levels and assist at the CanSat Ireland national competition.
   - ✓ Deliver on PR and Branding at Regional Levels
   - ✓ For the regional competitions ensure the teams are allocated unique frequencies for their transmitters.
   - ✓ Where possible, liaise with local industrial partners to invite them to act as mentors to the teams.

Appendices

Appendix I – CanSat Ireland Training Reporting Template
Appendix II – Evaluation Pre & Post questionnaire
Appendix III – Application Form
Appendix IV – Photo Release Form

Appendix I – CanSat Training Reporting Template

Event Title	
Location	*[venue – city – country]*
Date(s) / Course duration (hours)	
Type of training	
Language	
No. of teachers	
Teachers level	*[PE of SE]*
Brief description curriculum topics	
ESA/ESERO/other resources used / distributed	*[specify]*
Learning outcomes	
Photos or other relevant material	*[links]*

Appendix II – CanSat Ireland Pre & Post Evaluation Questionnaires

CanSat Ireland PRE-CANSAT Evaluation Form

Name: _____ Circle one: Male / Female / Other

School: _____ Year: _____ Age: _____

	Yes	No	Maybe
I like science			
I think STEM (science, technology, engineering, maths) is interesting			
Science is easy to understand			
I want to know more about space			
I want to know more about STEM			
It is important to know about STEM in my daily life			
I think I'm smart enough to understand science and technology (STEM)			
I would like to study science STEM at leaving certificate/university level			
I think Space Exploration & Earth Observation is worth pursuing			
I would consider a career in STEM			
I am aware of careers in the Space Industry in Ireland			

1. When you think about "Scientists", what comes to mind?
2. When you think about "Engineers", what comes to mind?
3. What does "Space" mean to you?
4. Do you have a family member who is working in a STEM field?
5. What do you like about science?
6. What subject are you most interested in?

7. Why were you interested in taking part in CanSat Ireland?

CanSat Ireland POST-CANSAT Evaluation Form

Name: _____ Circle one: Male / Female / Other

School: _____ Year: _____ Age: _____

	Yes	No	Maybe
I like science			
I think STEM (science, technology, engineering, maths) is interesting			
Science is easy to understand			
I want to know more about space			
I want to know more about STEM			
It is important to know about STEM in my daily life			
I think I'm smart enough to understand science and technology (STEM)			
I would like to study science STEM at leaving certificate/university level			
I think Space Exploration & Earth Observation is worth pursuing			
I would consider a career in STEM			
I am aware of careers in the Space Industry in Ireland			

1. When you think about "Scientists", what comes to mind now?
2. When you think about "Engineers", what comes to mind now?
3. What does "Space" mean to you now?
4. What did you enjoy **the least** during your CanSat Ireland experience?
5. What did you enjoy **the most** during your CanSat Ireland experience?

6. What did you learn by participating in CanSat Ireland competition

7. What do you now know about Ireland's involvement in the European Space Agency (ESA)?

8. Would you like to take part in CanSat again?

9. Other comments (e.g. why you enjoyed it, would you recommend it etc.):

Appendix III - CanSat Ireland 2019 Application Form

School name & address: _____

_____

_____

Teacher name _____

Teacher contact number: _____

Teacher email address: _____

CanSat Ireland Team Name: _____

CanSat Ireland Team members name, email address & date of birth (please use CAPITALS):

	Name	Date of Birth (dd/mm/yyyy)	EU PASSPORT
1.	_____		Y/N
2.	_____		Y/N
3.	_____		Y/N
4.	_____		Y/N
5.	_____		Y/N
6.	_____		Y/N

How will you distribute the work between the team members? Consider all aspects of your experiment (structure, software, data analysis, etc.)

_____
_____
_____
_____
_____
_____

Have you a communications plan? Tell us how you plan to let people know about the project. Please include blog/website accounts, Facebook links, Twitter accounts, Instagram accounts etc. as well as traditional media (articles in local newspapers etc)

_____
_____
_____
_____
_____
_____

Have you considered a Secondary Mission? Please give some details.

_____
_____
_____
_____
_____

Who introduced the CanSat Ireland Project to your School? How were the team members chosen?

_____
_____
_____
_____
_____

Are the team members in Fourth year TY ( ), Fifth year ( ), or Sixth year LC ( )?

How many of the team are taking (or planning to take) the following subjects;

Honours Physics ( ) Honours Maths ( ) Technology ( )
Other STEM Honours ( )

How many of the team have an interest in studying a STEM course at third level?

_____
_____
_____
_____

How many of the team have an interest in studying a space related course at third level?

_____

CANSAT IRELAND

_____
_____
_____

Does the team have any suggestions for improvements that could be made to the CanSat competition?

_____
_____
_____

Would any members of the team be willing to participate in a Career tracking Project?
Yes ( ) No ( )

I hereby confirm that I have read and agree to the conditions of the competition as outlined in the guidelines. ☐ Please tick

Cosmos Education CLG company compliance with GDPR regulations is available here and on request.
Please tick to agree to school data being stored for the purpose of the CanSat Ireland competition.

☐ Please tick

Signed: _____ (Teacher signature)

Thanks for helping with the above details, this will help improve the competition.

Ireland esero

BCO The Space For Science

Science Foundation Ireland sfi For what's next

Appendix IV – Photo Release Form

I hereby give Cosmos Education CLG permission to feature photographs and video of students from

(SCHOOL NAME): .....

AT:

CanSat Ireland events coordinated by CIT Blackrock Castle Observatory trading as Cosmos Education CLG.

I understand that photographs may be used by Science Foundation Ireland, ESERO Ireland, 3rd level colleges participating in CanSat Ireland, Cosmos Education CLG and its agents for CanSat Ireland promotional purposes.

I understand that Cosmos Education CLG, Science Foundation Ireland, ESERO Ireland and 3rd level colleges have the right to future repeat use of these images on their websites and on any associated media.

NAME: .....

ROLE: .....

SIGNATURE: .....

DATE: .....

If there are children / students for which your school does not have permission for photographs, please let us know on the day.