UKSEDS COMPETITIONS



SATELLITE DESIGN COMPETITION 2026-27

RULEBOOK

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1. ACRONYMS & REFERENCE DOCUMENTS

1.1. Acronyms

Acronym	Description
UKSEDS	UK Students for the Exploration and Development of Space
NSSC	National Student Space Conference
SDC	Satellite Design Competition
SSPI	Space & Satellite Professionals International
RPO	Rendezvous and Proximity Operations
ECSS	European Cooperation for Space Standardization
PDR	Preliminary Design Review
CDR	Critical Design Review
LRR	Launch Readiness Review
TRR	Test Readiness Review

1.2. Reference Documents

Competition Documents

ID	Document	Description
SDC-RB	Rulebook (this document)	Outlines the overall competition rules, funding, team structures and so on - the competition logistics.
SDC-SOW	Statement of Work	Outlines the main deliverables teams shall be expected to deliver - the competition project requirements.
SDC-RS	Requirements Specification	Outlines the technical requirements the satellite must be designed to meet

Useful Reference Documents

No.	Document	Description
1	ECSS-M-ST-10C Rev. 1	**Space project management** - Project planning and implementation
2	ECSS-S-ST-00-01C	**Glossary of Terms** - A list of commonly used terms in ECSS documents
3	ECSS-E-ST-10-03	**Testing Standards**

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2. Introduction

The Satellite Design Competition invites students to design, construct and operate a CubeSat system with a unique mission statement each year. Students shall create a payload concept, trade off performance parameters and pass through a review process involving panels of experts within the space industry before getting the opportunity to build their CubeSat designs. The competition aims to reach out to students from various backgrounds looking to develop their skills in designing, building and testing a satellite system

The competition aims to:

1. Challenge students to perform a complex, systems engineering task for the development of a payload to meet a set of real space mission requirements.
2. Gain exposure and experience of the typical design processes and protocols in industry projects, including multiple project reviews.
3. Enable students to apply taught technical skills and learn new ones relevant to a job in the space industry in an applicable project environment.
4. Provide students with an opportunity to develop and practise other important and transferable skills, such as teamwork, leadership and project management.

2.1. Scope

This document explains the rules for the Satellite Design Competition 26/27 iteration. It will describe key areas that participants are expected to abide by along with information that participants may find useful for finding and setting up a team.

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3. COMPETITION RULES

3.1. Competition Authority

The Satellite Design Competition rules are issued by UKSEDS annually. Official announcements by UKSEDS should be considered to have the same validity as these rules. UKSEDS reserves the right to alter the rules, clarify ambiguities, and disqualify teams at any point from taking part in the competition, for safety reasons or otherwise. Teams that enter agree to comply with the rules, and report ambiguities or mistakes to UKSEDS at satellites@ukseds.org.

3.2. Eligibility and Team Structure

The competition is open to university students and recent graduates who are also UKSEDS members. It has been designed to be carried out as a group project towards a degree, or by a UKSEDS branch team. If you do not fit in either of these categories, please email satellites@ukseds.org to enquire about eligibility. A UKSEDS membership can be applied for at https://ukseds.org/ignition/members/.

There may be a maximum of **10 team members per team**, and **minimum of 2**. The names of the team members must be provided to UKSEDS with any changes reflected in the team monthly report to UKSEDS. There may be an additional limit on the number of attendees to the competition event. Additionally, the work should be demonstrable as being done by the team members, and not academic supervisors or other advisers. Students should refer to the Code of Conduct or email satellites@ukseds.org with any questions or concerns they may have.

Tip: Team Structure

By its nature, payload design is incredibly interdisciplinary. We recommend building a team with students from a number of disciplines. We advise using standard engineering practices when developing the team structure. One key position we highly recommend is the systems engineer, to track technical project progress, manage hardware interfaces, and lead system integration and requirement compliance. The team should also have a project manager to oversee the progress of the project.

Standard engineering practices are advised for creating a team structure. It is also recommended that at least one team member takes the role of systems engineer. This role will be critical in defining how different parts of the satellite interface with one another. An example team structure is provided in Appendix RB-1.

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Support: Finding Team Members

UKSEDS might be able to help find team members if it is proving to be tricky. We have an extensive network of contacts at branches and in departments at universities across the country. Please get in touch with the team contact if you need some help.

Support: Team Connect

Designing, building, and testing a satellite payload is a multidisciplinary and collaborative exercise. In the real world, these projects are carried out by hundreds or thousands of scientists and engineers, all over the world. If your group does not have all the expertise you think you need, please get in touch with the team contact. We may be able to find individuals/another group that has a complementary skill-set at another university for you to collaborate with.

For example:

- University 1 consists of a group of mechanical and electronic engineers, with very little experience or skills in software development
- University 2 are a group of computer science students
- UKSEDS puts university 1 in touch with university 2, who form a team together

3.3. Plagiarism

Teams shall endeavour to use appropriate citations for all work that is not their own. Should any team be found to have plagiarised portions of other bodies of work, UKSEDS reserves the right to penalise or even remove teams from the competition. This is not something that is done lightly but is necessary to ensure the integrity of the competition.

Satellites that reuse significant elements (hardware or software) of previous years entries without any attempt at improvement or enhanced function (as determined at the judges discretion) will be penalised. Reuse without modification or improvement constitutes self–plagiarism and will be treated accordingly.

A detailed description of what is judged as plagiarism and possible consequences are outlined in the UKSEDS Competitions Plagiarism Guidelines.

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3.4. Design Requirements

Teams shall comply with all requirements listed in the Requirements Specification document (SDC-RS). Teams may choose to comply (or identify and explain areas of non-compliance) with other applicable space standards, such as the ECSS standards. Teams will be informed of changes to the Requirements Specification.

3.5. Costs and Funding

There is no fee to enter the competition. Teams should source funding for the project themselves, via grants from their universities, student unions or departments or sponsorship. Teams shall keep accurate records of their spending for the project and show proof of spend via receipts from purchase. Any misrepresentation of funds that results in teams saving money shall be considered seriously. Grants may be made available through UKSEDS, and if so will be released throughout the year.

3.6. Test Readiness Review

A mandatory Test Readiness Review will be conducted in late June (refer to Statement of Work). The satellite must clearly demonstrate key functionalities described in the Requirements Specification. If the satellite fails any high priority requirements (e.g. with regard to Safety, Command & Control, Power & Locomotion), they will not be able to progress to the next stage of the competition. Note it is not required for satellites to be fully complete at this stage.

Alongside the TRR submission, there shall be a mandatory submission towards the Public Engagement Award

3.7. Competition Day

The competition finale is the challenge day hosted by UKSEDS and Airbus. All competing teams shall bring their satellite so that the functionality of their hard work can be tested. The final date, location and travel arrangements will be released at a later date. We encourage all teams to design their own team patches, we would love to see your own personal touches to the competition!

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Prizes

Table RB-1 provides a full description of the prizes available for this year's competition. Prizes also have associated points available to be scored.

Table RB-1 : Full List of Prizes

Prize	Description
Best Satellite	For the best CubeSat based on the successful completion of the mission objectives and testing performance (awarded to the team with the most points).
Best Public Engagement	For the team with the best public engagement programme connected to their CubeSat.
Best Innovation Award	To the team with the best innovative engineering solution (decided by the judges).
Best Report	The highest scoring CDR shall receive this award.
Best Presentation	For the team with the best presentation on the day of the competition (assessed by the judges).

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Appendix RB-1: Example Team Structure

An example Team structure is provided below. This is not considered the "best" organisation method as teams may find structures that better suit their skills.

- Project Manager
  - Team Organisation
  - Budget Allocation
  - Project Schedule
  - Document Overseeing
- Systems Engineer
  - Interfacing all the different disciplines with one another
  - Top level architecture of the satellite
  - Monitoring requirements compliance
- Electronics Lead
  - Top level electronics decisions
- Electronics Engineer
- Mechanical Lead
  - Top level mechanical decisions
- Mechanical Engineer
- Software Lead
  - Top level software decisions
- Software Engineer
- (Public Engagement Lead)
  - (All external communications including to UKSEDS, social media presence etc)

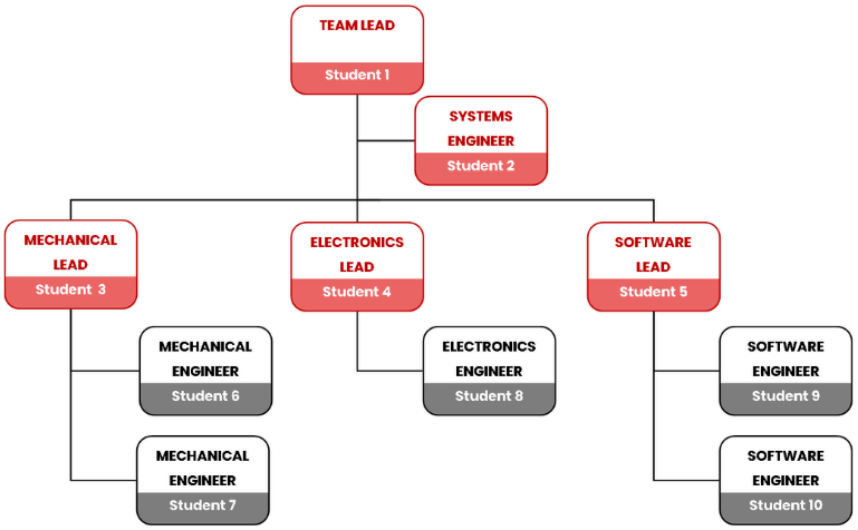


Figure RB-1: Example Team Structure

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