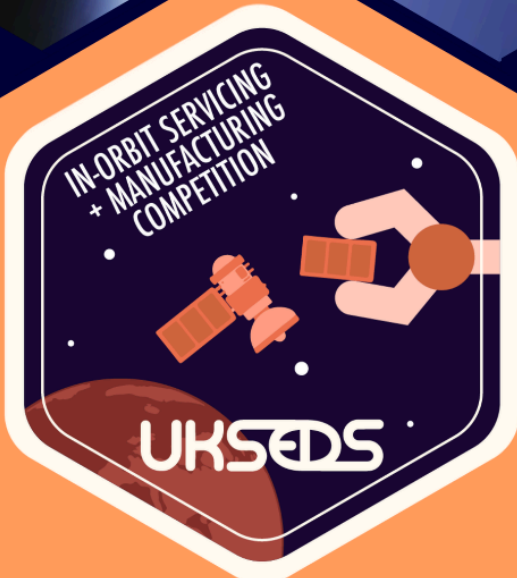


IN-ORBIT SERVICING AND MANUFACTURING 2026-27

STATEMENT OF WORK





Contents

1. ACRONYMS & REFERENCE DOCUMENTS	4
1.1. Acronyms	4
1.2. Reference Documents	4
1.2.1. Competition Documents	4
1.2.2. Useful Reference Documents	5
2. INTRODUCTION	6
2.1. Scope	6
2.2. Organisation Involved	6
2.2.1. UK Students for the Exploration and Development of Space (UKSEDS)	6
2.3. Where to start	7
3. STATEMENT OF WORK OVERVIEW	8
3.1. Mission Background and Scenario	8
3.2. Mission Objectives	8
3.3. Team's Requirements	8
3.4. Description of Work	9
3.4.1. Timeline	9
3.4.2. Monthly Reports	10
3.4.3. Public Engagement Award	10
3.4.4. Challenge 1 - Initial Proposal	11
3.4.5. Challenge 2 - Detailed Proposal	11
3.4.6. Challenge 3 - Presentation Day	13
3.4.7. Marking Scheme - Overall Competition	13
3.5. Extension	14
4. HELP AND IDEAS	14
5. MENTORING IN ISAM COMPETITION	15
Appendix SOW-1: Public Engagement Award	21
What should be in the video:	21
What counts as an 'activity'?	22





Document Information

Written By	Responsibility
Vincent Peters	ISAM Volunteer
Ali Haider	ISAM Volunteer
Joel Cabrera	ISAM Co-lead
Iwan Thomas	ISAM Co-lead
Anthony Smith	Former Co-Lead
Verified By	Responsibility
Tayeb Jasseh	Competitions Team Co-Leads
Harry Price	
Approved By	Responsibility
Harry Szpuk	UKSEDS Chair

Version	Changes	Date Approved
ISAM-SOW-001	Initial Release	01/10/2026





1. ACRONYMS & REFERENCE DOCUMENTS

1.1. Acronyms

Acronym	Description
SOW	Statement Of Work
UKSEDS	UK Students for the Exploration and Development of Space
ELSA-d	End-of-Life Service by Astroscale demonstrator
ITT	Invitation To Tender
MEV	Mission Extension Vehicle
ROI	Return On Investment

1.2. Reference Documents

1.2.1. Competition Documents

There are three other documents related to the competition to make a total of **four regulatory documents**. The three documents are as follows:

ID	Document	Description
ISAM-CH1	Challenge Document 1	Outlines challenge 1 – the initial proposal – and work to be completed during the initial stage of competition.
ISAM-CH2	Challenge Document 2 (Not Released) ¹	Outlines challenge 2 and work to be completed in the later stage of competition.
ISAM-CH3	Challenge Document 3 (Not Released) ¹	Outlines challenge 3 and work to be completed in the later stage of competition.
ISAM-SOW	Statement of Work (This Document)	Outlines the main deliverables teams shall be expected to deliver – the competition project requirements.
ISAM-RB	Rulebook	Outlines the overall competition rules, funding, team structures and so on – the competition logistics.

¹ Challenge 2 and 3 documents will be released once the respective stage of the competition has been reached.





1.2.2. Useful Reference Documents

No.	Document	Description
1	ECSS-M-ST-10C	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	Space Industrial Plan	Space Industrial Plan - Policy document outlining the UK Space Agency's general strategy
4	Factories in Space	Factories in Space - This is a website to understand the ISAM ecosystem and market predictions
5	How commercial space dream is becoming a reality	This document provides a strategic and economic framework for new ideas to position In-Orbit Servicing and Maintenance as a key commercial opportunity within the evolving "Big Space" ecosystem.
6	UK Space Strategy - Technical Delivery Annex	UK Space Strategy Technical Delivery Annex documenting the funding allocations and prioritisation of aspects of ISAM.
7	ESA Strategic Initiative in support of ISAM: investigation of future use cases	ESA strategic document which lays out what they see as the future of the ISAM sector





2. INTRODUCTION

Welcome to the UKSEDS In-orbit Servicing, Assembly, and Manufacturing (ISAM) Competition for 2026–2027. The commercial space sector is expanding rapidly, leading to an increased number of satellites in orbit. This growth presents significant challenges and opportunities, including the management of space debris and the need to extend the operational life of assets.

ISAM is a critical field that addresses these issues by enabling the repair, refueling, assembly, upgrading of satellites and other structures directly in space, and development of other technologies and resources including medicine and communications. Both the UKSA and ESA identify ISAM as a critical capability and are initiating Invitations To Tender (ITTs) for debris removal and mission extension solutions, as well as improving security infrastructure and domain awareness. ISAM is foundational to creating a sustainable and scalable in-space economy. The UKSEDS ISAM Competition is designed for students to develop innovative solutions in this emerging field. The competition challenges teams to think like a startup, combining technical concepts with commercial strategy to address a real-world need within the ISAM market.

2.1. Scope

This document reports expected activities and deliverables within the scope of the ISAM Competition for 2026–2027. This document captures the mission, which teams are expected to focus on throughout the year, with context provided behind the mission.

2.2. Organisation Involved

2.2.1. UK Students for the Exploration and Development of Space (UKSEDS)

UKSEDS is the UK's national student and early professional space charity, founded in 1988. As a registered charity with 4,600+ current members, 40+ university branches, and 20,000+ followers across social media platforms; UKSEDS provides a nationwide platform for skills development, networking, and career advancement in the space sector.

As a dedicated team of 100+ student and early-career volunteers, UKSEDS delivers national and regional events and projects, including conferences such as the National Student Space Conference (NSSC), skills workshops, outreach programs, five annual national competitions spanning rocketry, rovers, satellites and ISAM, and more. Through these initiatives, UKSEDS works to inspire, upskill and enable the next generation of the UK space workforce.





2.3. Where to start

This document is accompanied by the Challenge Document 1 (ISAM-CHI) describing the first challenge of the ISAM Competition. This initial proposal, challenge 1, focuses on foundational mission and business planning. Before undertaking detailed technical design, your team will agree on each individual's role, establish a conceptual startup, define your mission, sketch your product or service, analyze your strategic position, and evaluate your project's potential impact.





3. STATEMENT OF WORK OVERVIEW

This section provides a description of all the major components of the competition and includes references to additional material where necessary. *For competition rules, regulations, team requirements, eligibility and other general competition requirements, please refer to the 2026/27 Rulebook.*

3.1. Mission Background and Scenario

ISAM has become a front-end topic of conversation and development in the space sector. In 2026, the [UK Space Strategy](#) identified ISAM as one of four priority space subsectors for faster development, with a focus on developing commercially credible capabilities, building flight heritage and securing a long-term competitive advantage for the UK.

This development is also taking place in Europe, with the [ESA Strategic Initiative](#) identifying ISAM as a strategic area for creating more sustainable, resilient and service-oriented space operations and supporting the development of future commercial services.

To ensure the UK positions itself as a future leader in the in-space economy, the UK Space Agency has issued this Invitation to Tender (ITT) for business proposals that address a genuine market need and lead towards an In-Orbit Demonstration (IOD) of ISAM technologies.

3.2. Mission Objectives

For this competition, you shall complete a business proposal in response to an Invitation To Tender (ITT) to create a market that leverages ISAM technology. The main requirements for this proposal are the following:

1. The project budget is **not subject to financial limitations**; however, all costs from launch through to end-of-life disposal must be fully quantified and **justified**.
2. The mission must be **profitable after 10 years** of operation.





3.3. Description of Work

3.3.1. Timeline

The project shall follow a typical **Project Lifecycle structure** as shown in Figure SOW-1. The competition timeline runs from October to July, split into three stages: Challenge 1 (Initial Proposal), Challenge 2 (Detailed Proposal), and Challenge 3 (Final Challenge/Presentation).

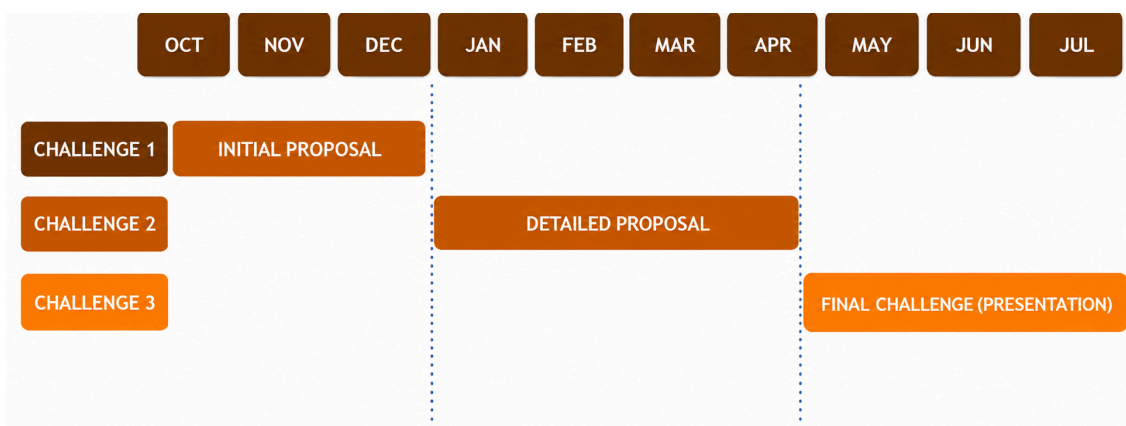


Figure SOW-1: ISAM 2026/27 Timeline

Each Challenge is completed through the submission of a document, detailing the design of your system. Further details of the deliverables can be found in the next submission with a summary shown in the table below.

Table SOW-1: Preliminary Competition Schedule

Deliverable	Due Date ²
Monthly Report	First Monday of every month
Initial Proposal Deadline	31st December 2026
Initial Proposal Feedback	28th January 2027
Detailed Proposal Deadline	30th April 2027
Detailed Proposal Feedback	21st May 2027
Public Engagement Deadline	30th April 2027
Competition Day Presentation	June 2027 ³

² Dates are subject to change and will be communicated accordingly to participants.

³ The date will be confirmed at a later date.





3.3.2. Monthly Reports

Teams will need to fill out a single page report and email the UKSEDS Point of Contact. Reports are to give updates on progress and highlight issues or concerns within the team (technical, management, etc) and are a mandatory submission. The report is due on **the first Monday of every month at 23:59 GMT**. If a monthly report is not received, it will be assumed the team has dropped out of the competition. The template can be found [here](#), or on the website.

3.3.3. Public Engagement Award

Throughout the year, your team may take part in activities to showcase the work that has been done. Further, teams may also take part in education activities, such as workshops, lectures or school visits, to talk about Space, Engineering or STEM. Aligning with the European Space Agency, UKSEDS also believes [Space is for Everyone](#) and actively encourages teams to spend some time engaging with the community around. The team determined to have the best public engagement will win their **own sub-category trophy to be presented** at competition day. More information can be found in [Appendix SOW-1: Public Engagement Award](#).





3.3.4. Challenge 1 – Initial Proposal

During this phase, teams will need to come up with a startup idea. The goal is to identify the direction of your project and the feasibility of your goals. The following tasks can be used as guidelines of what to complete:

- Developing a name for the business/service.
- Outlining the team structure and allocated roles.
- Providing an outline of the product and the research behind into the current and future markets.
- Creating a mission statement that includes the aim of the product, main objectives for the startup, what differs the product from others, the target market, and further reaching impacts of the product.
- Teams create a mission patch that visually represents their project's mission, purpose, and identity.
- Identify strengths and weaknesses with a SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis.
- And finally, a prediction of the project's impacts with a PESTEL (Political, Economic, Social, Technological, Legal, Environmental) analysis.

Teams will then combine this into a single **PDF document** and will be sent to ISAM@ukseds.org before the deadline. *Check the document describing the Initial Proposal for more details.* Teams should focus on spending time to make the document look like a professional industrial document. An example of expectations can be found in the [UKSA Corporate Plan 2022-2025](#). More information can be found in the challenge document.

DUE DATE: 31st December 2026





3.3.5. Challenge 2 – Detailed Proposal

Once the product's goals and objectives have been identified, teams will need to develop these ideas into greater depth and start formulating a professional business plan. Teams will be required to work on formulating a vision for the business. A guideline of topics that teams can develop is provided below⁴:

- Highlighting value chain and revenue streams in the business
- Implementation methods to capture value streams
- Provide clear outlines of the technical & logistical challenges to overcome
- Highlight risks and mitigation tactics
- Timelines with a cumulative revenue/cost/profit analysis

By the end of this stage a fully formulated vision for the business and mission should be developed with analysis and research **with references to back up claims** to show how the implementation will be carried out. This will direct the foundation of your business proposal, outlining the key points for potential hypothetical investors and thus should explain all essential details pertaining to the proposal.

The submission should be delivered as a single **PDF document**. The final upload method is **TBC** and will be confirmed closer to the deadline; submissions are currently expected to be uploaded through the UKSEDS ISAM Submissions Page. If teams are struggling to formulate a business plan, there are resources available on the UK Government website [Write a Business Plan](#). While teams are encouraged to use this site for inspiration, they are also expected to exercise their own judgement on what is appropriate for the competition submission and their specific business plan. This business plan will then serve as the basis for the Presentation in the next phase.

DUE DATE: 30th April 2027

⁴ These points are meant to highlight areas/topics teams can focus on but do not serve as a markscheme.





3.3.6. Challenge 3 – Presentation Day

Once teams have created their business plan, they will then have to create a presentation of their business plan. Teams will have to clearly and concisely capture the main points of their business plan, highlighting the journey to key points and decisions and justify why they believe they have a successful business. Teams will then be subject to questioning. This presentation is meant to act as a dragons den style presentation and give teams the opportunity to develop their skill of communicating their idea to investors and a wider audience.

The Presentation Day will be a **full day event in person** in June – date and location will be confirmed. The presentation will be 15 minutes with 10 minutes of questions and a further 5 minutes either side to set up and clear down. The best teams may have the opportunity to present their projects at the ISAM Conference, showcasing their work to a broader audience.

To **qualify for the Presentation Day**, teams must have **submitted all deliverables (Challenge 1, Challenge 2, Challenge 3)** and **attended all [Mentoring Meetings](#)** throughout the competition.

DUE DATE: June 2027⁵

3.3.7. Marking Scheme – Overall Competition

Each team deliverable will be given a final mark. These marks will then be weighted using the percentages in Table SOW-2. Following this, the ranking of the teams will be put in order with the winner being the team with the highest overall score. Teams will also be able to win awards for best: Detailed Proposal, Presentation and Public Engagement.

Table SOW-2: Final Scoring Weighting

Challenges	Weighting
Initial Proposal	25%
Detailed Proposal	25%
Presentation	30%
Mentor Meetings (Attendance)	15%
Public Engagement	5%

⁵ Date to be confirmed at a later date.





3.4. Extension

If your team requires an extension, contact your competition point of contact. Please state clearly the reason for your request for an extension, at least 7 days before the submissions deadline. Note that extensions are considered on a case-by-case basis and submitting a request does not automatically guarantee an extension, so it is advised to continue working towards the original submission until you have received a verdict. Please be aware that providing an extension is at the discretion of UKSEDS. Unless explicitly stated, please assume that if the extension has been granted, it is an extension of 7 days from the original submission date.

4. HELP AND IDEAS

To help teams with some initial inspiration, the following section has been added to suggest some existing ideas surrounding ISAM.

Several existing projects illustrate how ISAM is already moving from theory into practice. One example is Northrop Grumman's Mission Extension Vehicle (MEV), which has successfully docked with commercial satellites in geostationary orbit to extend their operational life. This represents a tangible case of satellite servicing with direct economic returns, reducing the need for costly replacements. Similarly, companies such as Astroscale are developing debris removal and satellite life-extension services, including their ELSA-d mission, which demonstrated the ability to capture a client satellite using a magnetic docking plate.

On the manufacturing side, firms like Redwire (formerly Made In Space) have already flown 3D printers aboard the International Space Station. Their facilities have been used to produce structural components and even bioprinted tissue in microgravity, with the aim of scaling up to industrial-grade in-orbit manufacturing. Another company, Varda Space Industries, has launched a spacecraft designed to produce pharmaceuticals in orbit and return them to Earth via a small re-entry capsule, demonstrating how high-value manufacturing in microgravity can serve terrestrial markets. Likewise, Space Forge is working on reusable return-to-Earth platforms, targeting advanced materials manufacturing.

Alongside these real-world projects, there are also promising theoretical concepts. For example, the idea of a robotic "first responder" spacecraft in lunar orbit has been proposed as a way to rapidly diagnose or stabilise spacecraft suffering from malfunctions, avoiding the need for costly human intervention. Another concept is 3D printing infrastructure components in orbit, such as solar panels or radiation shielding, using recycled materials. While these ideas remain at the conceptual stage, they reflect genuine gaps in the market and align with long-term goals for sustainable space exploration.





5. MENTORING IN ISAM COMPETITION

This year, **Mentoring Meetings** are being introduced as a mandatory part of the competition, carrying a weight of **15% of the overall grade**. The meetings provide structured guidance and support to participants as they progress through the different challenges of the competition.

Participation involves **two mandatory online mentoring meetings**, each focused on specific stages:

- **Challenge 2:** The initial meeting will be held during Challenge 2, with the exact time and date to be negotiated when you have been assigned your mentor. This meeting will have a focus on refining your **detailed proposal**.
- **Challenge 3:** The final meeting will prepare teams for Challenge 3, with a particular focus on **pitching their projects**.

Each meeting is a chance to enhance collaboration skills, as they provide opportunities for participants to **network and seek tailored guidance** regarding their projects within the scope of the competition.

To ensure transparency and **avoid plagiarism**, mentors must be acknowledged in the documentation submitted by participating teams. Additionally, any external help, such as advice from a friend outside the team or a professor at the team's university, must be disclosed as a **collaborator**, especially during the presentation in the final challenge. As UKSEDS cannot monitor all outside influences, participants are strongly advised to limit such interactions to sources of **inspiration only**. Should participants still seek external guidance, they are required to notify UKSEDS. Failure to disclose such support will be considered **unfair conduct** and may result in heavy penalties or disqualification.





Appendix SOW-1: Public Engagement Award

Public engagement is an important part of the space industry, whether that is inspiring future generations to pursue STEM careers or helping the wider public understand the importance of space and STEM.

Teams are required to undertake public engagement during the competition, worth **5% of their overall grade on a pass/fail basis**. Teams must provide evidence of their public engagement as part of their poster presentation on Competition Day to receive this 5%.

Public engagement will also form a sub-category award, with the judges selecting the team they believe has demonstrated the strongest public engagement throughout the competition.

What counts as an 'activity'?

Anything! Public engagement can take many forms. Teams could use social media platforms such as Instagram or TikTok to share their project, explain their proposal, provide updates and generate interest in their work. Teams could also carry out in-person outreach, such as visiting schools to educate and inspire young people about space and STEM, or hosting activities and talks at their university or within their local community.

These are only examples, and teams are encouraged to be creative in how they engage with the public. Activities should have a clear purpose and be appropriate for the audience the team is trying to reach. An award will be presented to the team that demonstrates the best overall public engagement throughout the competition.

If your team is struggling to find a suitable way to engage the public, please contact us at isam@ukseds.org for guidance.

END OF DOCUMENT

