2024 RunSpace Innovation Challenge

Origin and Purpose

To foster the foundational momentum of Taiwan's space industry, the Industrial Development Administration, Ministry of Economic Affairs, has been organizing the "RunSpace Innovation Challenge" since 2022. This year marks the third edition, and to expand the event, the "Innovation Category" and the "Sponsor Special Topic" have been included to include more participants with diverse background joining the contest.

The competition, based on the pulse of space industry development, covers various thematic areas, inviting interaction and exchange between space industry professionals and talents. The aim is to unleash innovative ideas and concepts, unearth cross-industry creativities in the space industry, and assist in creating further collaboration opportunities with domestic and international stakeholders. A sincere welcome to talents interested in the space domain to participate in this space adventure!

Organizers and Partners

- **Organizer:** Industrial Development Administration (IDA), Ministry of Economic Affairs
- **Executive Organizer:** Institute for Information Industry
- **Strategic Partner:** EnduroSat
- **Supporting Partners:** Axiom Space, National Science and Technology Development Agency (NSTDA)

Contest Introduction

1. **Eligibility:**

   • No restrictions on nationality and age. Startup teams, companies, individuals, or students can form teams to participate.

   • Each team can consist of 1-5 members, freely forming teams, with team members not allowed to participate in multiple teams.

   • Participants may register for either the Implement Category or the Innovation Category, but not both, and they may only submit one entry per team.

   • Participants who have taken part in either the Implement Category or the Innovation Category of this year's competition may form new teams to register for the Sponsor Special Topic. If not participating in the aforementioned categories, individuals may choose to register solely for the Sponsor Special Topic (with a limit of one submission per team for the Sponsor Special Topic).

2. **Registration deadline:**

   • Implement Category and Innovation Category- June 30th 12:00 PM Noon (UTC+8).

   • Sponsor Special Topic-EnsuroSat DeskSat Challenge-July 31st 12:00 PM Noon (UTC+8)

3. **RunSpace Innovation Challenge official website:** https://runspacechallenge.com/en/

4. **Themes:**

   Focusing on "Ground Equipment & Services," "Satellite Manufacturing," "Satellite Services," and "Satellite Launch," as well as "Other" (including space environmental cleanup, space radiation detection, space equipment testing technology, space agriculture, microgravity experiments, space politics, space economy, space law, etc.)

RunSpace invite participants to propose relevant service scenarios and innovative solutions.

5. Procedure and Judging Criteria (Full English)

	Implement Category	Innovation Category	Sponsor Special Topic
Preliminary Stage	**Online Review** 10 slides of project proposal to present your project.	**Online Review** 10 slides of project proposal to present your project.	**No preliminary stage.** 10 slides of project proposal to present your project.
Final Stage	**Presentation and demonstration** 1. Project demonstration with visualized objects, such as work prototypes, 3D models, dashboards, program simulations, etc. 2. A 90-second video with English subtitle.	**Online Review** 1. Updated version of 10 slides project proposal. 2. Application & scenario video (3 minutes) with English subtitle.	**Presentation and Algorithm Testify** 1. Updated version of 10 slides project proposal. 2. Run the algorithm on EnduroSat DeskSat.
Judging Criteria	- Theoretical and Technical Innovation 40% - Problem Application and Resolution 20% - Future impact 20% - Business Feasibility Assessment 20%	- Relevance to Space 30% - Problem Application and Resolution 30% - Future Impact 30% - Business Feasibility Assessment 10%	- Theoretical and Technical Innovation 40% - Problem Application and Resolution 20% - Future impact 20% - Business Feasibility Assessment 20%

6. Sponsor Special Topic – EnduroSat DeskSat Challenge

Use EnduroSat DeskSat and the ST AutoML tool to develop and test a machine learning algorithm for onboard anomaly detection and prove its usefulness by deploying it on EnduroSat's OBC and simulating anomalies through command sequences.

- Learn how to use DeskSat and SpaceDev for operating a satellite clone
- Learn how to use EnduroSat's SDK and the automatic command and telemetry database import through FIDL files
- Define key quantities and prepare onboard data cache configuration to keep track of those, demonstrate their usefulness for anomaly detection by injecting anomalies on purpose through SpaceDev and manually tracking the quantities
- Research ST's AutoML tool and develop an application for anomaly detection compatible with the EnduroSat OBC
- Integrate the application within EnduroSat's OBC and expose key anomaly detection alarms in the mission database through a custom FIDL
- Demonstrate the usability of this algorithm in an end-to-end test, showcasing nominal operations vs. injected anomalies.

7. **Awards:**

- **Implement Category**

  1st Place: NT$300,000

  2nd Place: NT$150,000

  3rd Place: NT$100,000

- **Innovation Category**

  NT$10,000 for each of the 5 winners

- **Sponsor Special Topic**

  Complimentary usage of EnduroSat DeskSat for one year (software & hardware)

- **EnduroSat Bonus Awards**

  3 participants of this year's RunSpace Innovation Challenge (including the Implement Category, the Innovation Category, and the Sponsor Special Topic) will have the opportunity to enter the final stage of interviews for the 2025 EnduroSat Space Challenge Boot Camp.

8. **Contact:**

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