

Overview of Tottori Rover Challenge

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Background

- We have provided opportunities for practical training in space engineering by conducting competitions, mainly using CanSat.

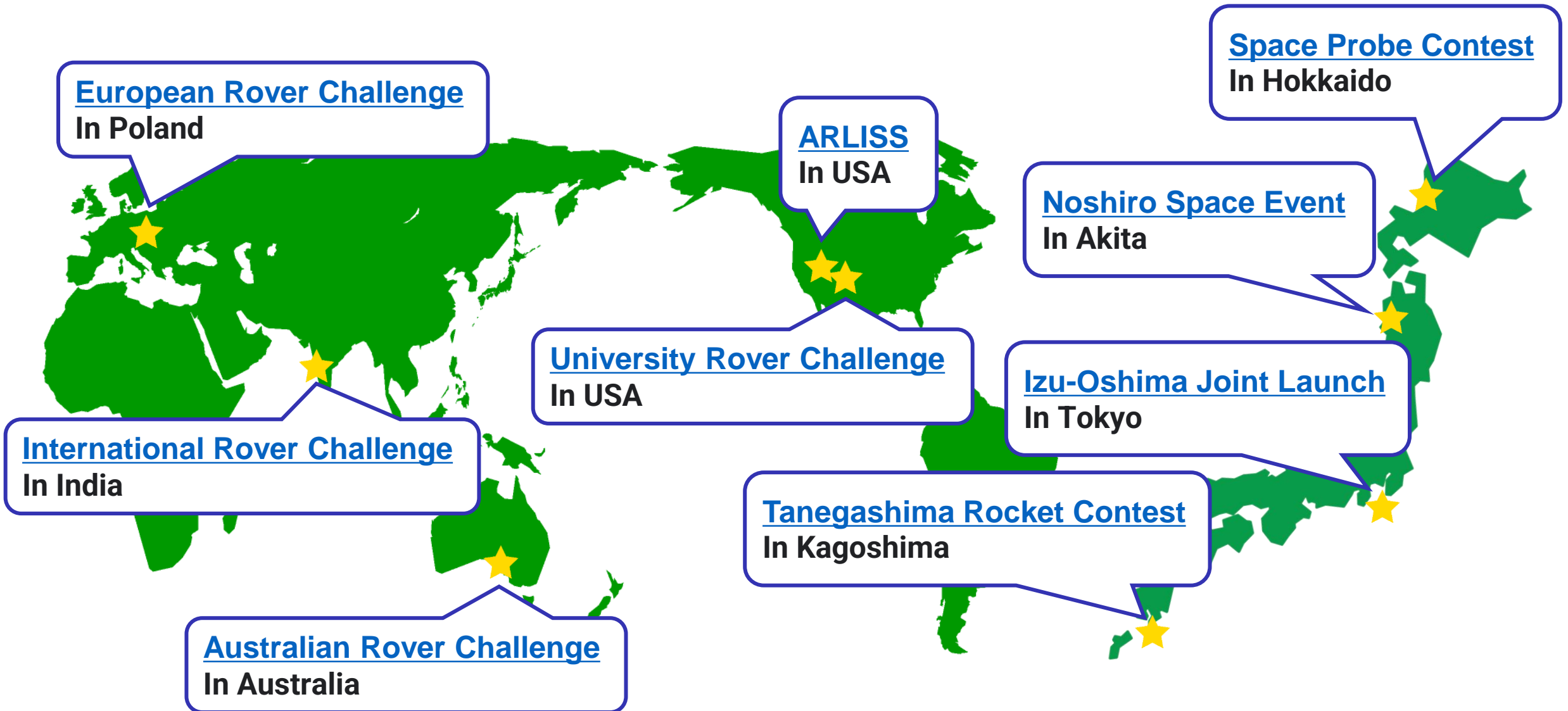


ARLISS, Black Rock Desert, NV, USA



Noshiro Space Event, Akita , Japan 2

Rover and CanSat competitions internationally and in Japan



Environmental Differences

Noshiro, Akita



Hard grassland
and puddle

Izu-Oshima, Tokyo



Scoria ,
volcanic
deposits

Tanegashima



Soft grassland

ARLISS, USA



Desert

Good
condition

Looking for a Best Field

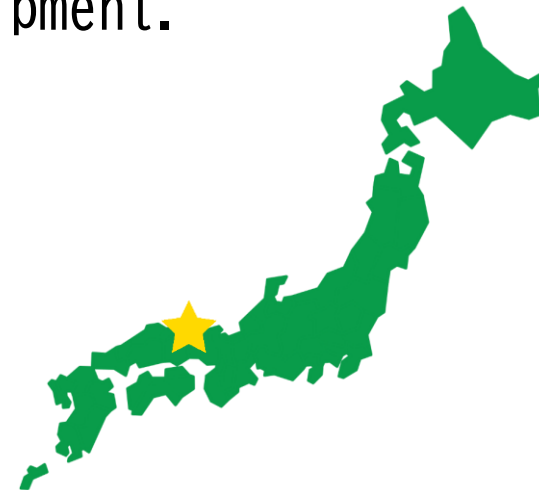
- The competition sites in Japan are mainly grassland, which is very different from the real space environment.
- In the competitions held by UNISON, the ARLISS competition field is the good environment.
- We thought: Are there any fields in Japan that are like the real environment...
 - For example, a field that simulates the surface of Mars or the Moon.

Tottori Sand Dunes Lunar Demonstration Field

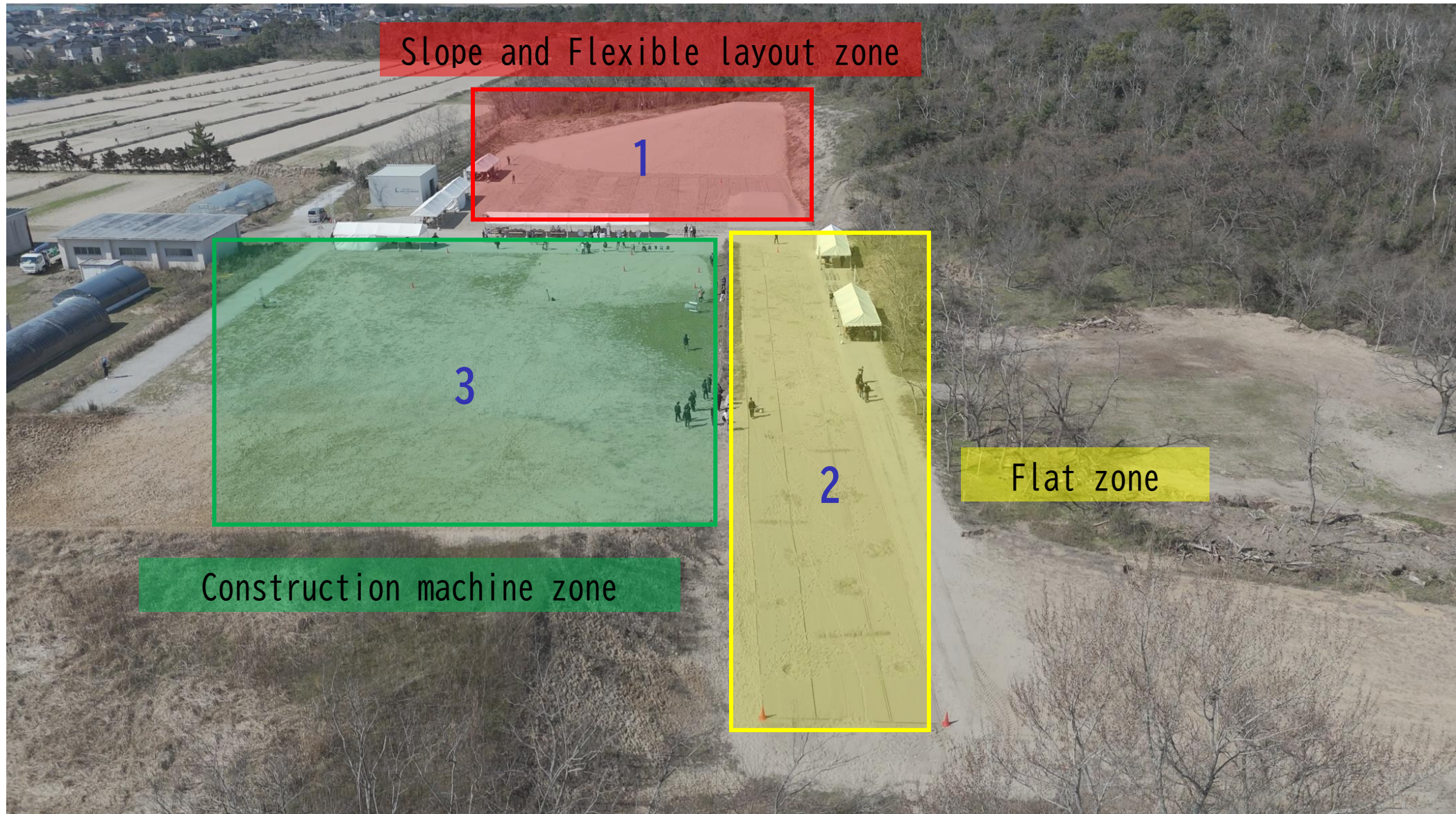
Luna Terrace



- On 7th July 2023, the first demonstration field for lunar exploration in Japan will be opened at the Tottori Sand Dunes.
- Domestic and foreign companies and researchers can conduct demonstrations of lunar rovers and space equipment.



Luna Terrace



Tottori Rover Challenge (TRC)

The first lunar rover competition in Japan.



Purpose of the Competition

1. To provide opportunities for students to learn and gain experience in developing practical robotics and space exploration technologies.
2. To contribute to the development of future space explorers by enhancing their creativity and technical skills through competition and exchange.
3. To demonstrate that lunar environmental tests can be conducted using the topography of the Tottori Sand Dunes through the competition.

■ March 22nd, 2025 (Sat)

■ Participants:

- ARES Project, Tohoku Univ., Keio Univ. and other
- KARURA Project, The University of Tokyo, Shinshu Univ. and other
- NAFT, Nagoya Univ.
- Tokyo University of Information Sciences
- Polytechnic College Shimane
- Tottori University
- Nihon Univ.
- ASE-Lab.

Two categories of participation.

- Expert category
- Entry category

Three Mission Type:

- Scientific Exploration Mission
- Autonomous Running Mission
- Unmanned Construction Mission



Scientific Exploration Mission - TRC2025

- Scientific Exploration Mission
 - Maintenance of lander
 - Survey of rock samples
 - Hill climbing and wide area observation



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Autonomous Running Mission - TRC2025

- Autonomous Running Mission
 - Path planning and autonomous running



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Unmanned Construction Mission - TRC2025

- Unmanned Construction Mission

- Measurement

- Transportation of Materials (pick-and-place)



Unmanned Construction Mission - TRC2025

- Unmanned Construction Mission

- Measurement

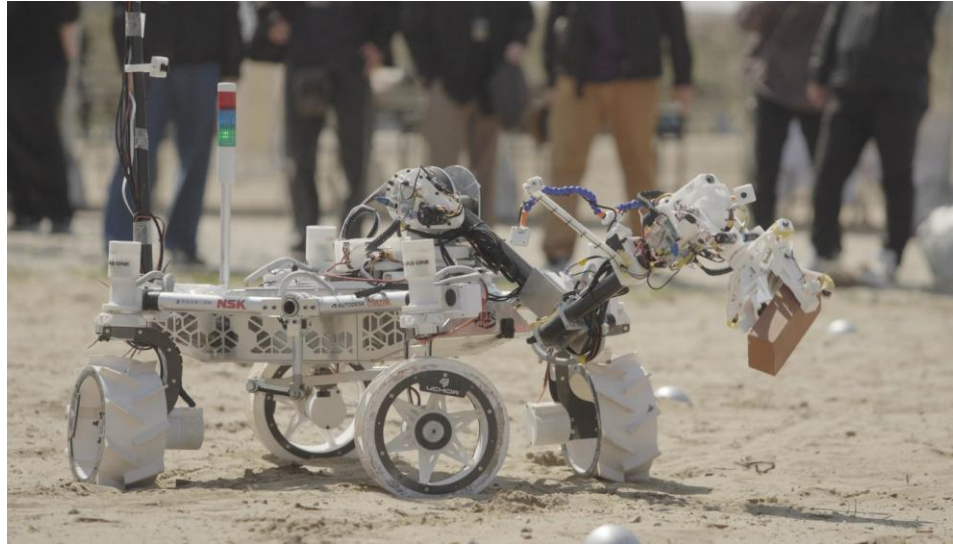
- Transportation of Materials (pick-and-place)



Result – TRC2025

■ Expert category

- 1st: ARES Project
- 2nd: KARURA Project
- 3rd: NAFT



■ Entry category

- 1st: Tokyo University of Information Sciences
- 2nd: Polytechnic College Shimane
- 3rd: Tottori University





Group photo at the awards ceremony

- Tottori Rover Challenge 2026 is also scheduled to be held on March 2026.
- In the future, we would like to make it an international competition.

Official SNS (X): [@TRC_Official_PR](#)

Website: www.tottori-rover-challenge.com/

