The 9th
Mission Idea Contest:
to the Moon

Introduction to the 9th Mission Idea Contest : to the Moon (MIC9)

Lunar Mission

MIC Office

https://www.spacemic.net/

UNISEC GLOBAL
University Space Engineering Consortium

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MIC9 Overview

The lunar missions consider the use of one or more CubeSats placed into lunar orbit or one or more rovers deployed on the lunar surface. Designs are encouraged to demonstrate originality, impact, engineering elegance, and feasibility.

Category:

- Lunar Orbit CubeSat Mission (LOCM)
- Lunar Surface Rover Mission (LSRM)

Important dates:

Abstract submission due: **April 15, 2025**
Notification: ~~**May 20,**~~ **June 2, 2025**
Full paper submission(Finalists): **August 5, 2025**
Final presentation: T.B.D. in Japan
(Selected finalists will make a presentation at MIC9.)

Background (1)

- Mission Idea Contest was launched in 2010 to encourage innovative exploitation of micro/nano-satellites to provide useful capabilities, services.
- It provides aerospace engineers, college students, consultants, and anybody interested in space with opportunities to present their creative ideas and gain international attention.

MIC4 finalists and reviewers, Oct. 21, 2016, Verna, Bulgaria

MIC8 finalists and reviewers, Nov. 29, 2023, Tokyo, Japan

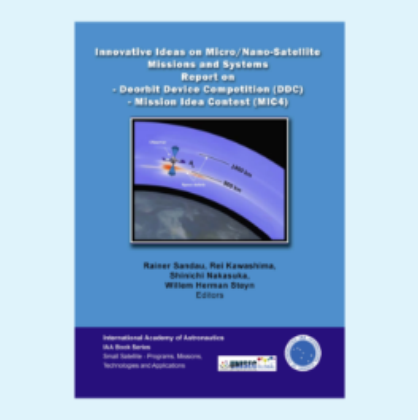
PreMIC9 finalists and reviewers, Nov. 27, 2024, Stellenbosch, South Africa

Background(2)

8 MICs and 5 Pre-Workshops were successfully organized in 2011-2024.

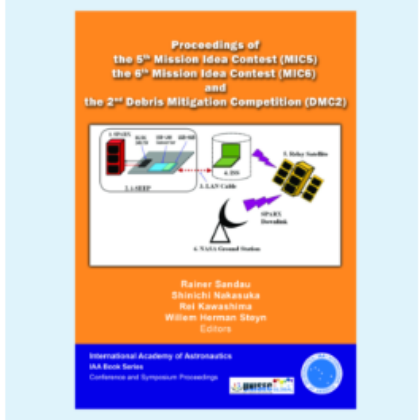
- Results
  - Potential utilization of micro/nano-satellites were provided in the large number of submitted proposals
  - Four books and three e–books were published as IAA book series

https://iaaspace.org/product-category/pub/bookseries/

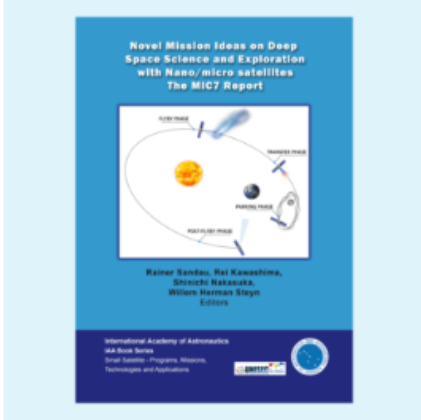


Innovative Ideas on Micro Nano-Satellite

Inventive Ideas for Micro/Nano-Satellite
The MIC3 Report



Proceedings of the MIC5 / MIC6 / DMC2



The MIC7 Report

The MIC8 report

MIC Winners' Mission Ideas

	Proposed idea	Country
MIC 1 (2011,Tokyo) (constellation)	Integrated Meteorological / Precise Positioning Mission Utilizing Nano-Satellite Constellation	Japan (professional)
MIC 2 (2012,Nagoya) (Satellite Design)	SOLARA/SARA:Solar Observing Low-frequency Array for Radio Astronomy/ Separated Antennas Reconfigurable Array	USA (student)
MIC 2 (2012,Nagoya) (Business model)	Underground and surface water detection and monitoring using a microsatellite	South Africa (student)
MIC 3 (2014, Tokyo)	Clouds Height Mission	Germany, Italy, Sloveni (professional)
MIC 4 (2016, Bulgaria)	CubeSat constellation for monitoring and detection of bushfires in Australia	Australia(student)
MIC 5 (2018, France)	Smallsat Ionosphere Exploration at Several Times and Altitudes,	Taiwan, USA, India (student)
MIC 6 (2019, Tokyo) (ISS-IceCube)	MUSA: An ISS Experiment for research of a dual culture for Panama Disease	Costa Rica(student)
MIC 6 (2019, Tokyo) (ISS-iSEEP)	Spectrum Monitoring from Space with i-SEEP (SMoSiS)	Philippines (professional)
MIC 7 (2022, Tokyo)	PARS: Precursor Asteroid Remote Surve	Turkey (student)
MIC 8 (2023, Tokyo)	MOTHS: Moon Observation Through Hyperspectral Satellites	Italy (student)

MIC1-9 & Pre-MIC3-9 Comparison

	MIC1	MIC2	PreMIC3	MIC3	PreMIC 4	MIC4	PreMIC5	MIC5	MIC6	MIC7	PreMIC 8	MIC8	PreMIC9	MIC9
Satellite mass	< 15 kg	<50 kg	<50 kg	<50 kg	<50 kg	<50 kg	<50 kg	<50 kg	ISS Platform	Deep Space	<6'U	<6'U	<12'U	<12'U
Number of satellites	2 or more (constellations only)	1 or more	1 or more	1 or more	1 or more	1 or more	1 or more	1 or more	N/A	N/A	2 or more	2 or more	1 or more	1 or more
Rover mass													<10 kg (Maximum Convoy Mass)	<10 kg (Maximum Convoy Mass)
Number of Rover													1 or more	1 or more
Category	1	2	2	1	2	1	1	1	2	2	1	1	2	2
	Mission idea for nano-satellite constellation	Mission idea& satellite design	User	Mission idea and satellite design	Mission proposer	Mission idea and satellite design	Mission idea and satellite design to satisfy any of SDGs	Mission idea and satellite design to satisfy any of SDGs	ICECUBES	Mission idea for Deep Space Science and Exploration with Nano/Micro Satellite	Multiple satellites mission (constellation and Formation flying)	Multiple Satellites Mission (constellation and Formation flying)	Lunar Orbit CubeSat Mission	Lunar Orbit CubeSat Mission
		Mission idea & business model	Developer		Resource provider				(inside)	cis-lunar orbit or deep space trajectory orbit			Lunar Surface Rover Mission	Lunar Surface Rover Mission
									iSEEP (outside)					

Requirements

Theme: ***“Lunar Mission “***

Category:

- Lunar Orbit CubeSat Mission (LOCM)
- Lunar Surface Rover Mission (LSRM)

Details of Requirements：
https://www.spacemic.net/pdf/mic9/MIC9_Mission_Requirements.pdf

Please download and use the abstract template on the website.

https://www.spacemic.net/

Process and Timeline

Application Submission: Deadline April 15, 2025

Submitted abstracts will be evaluated by review team

Notification of Finalist: ~~May 20,~~ June 2, 2025

Title of paper and finalist(s)' name and affiliation will be published on the website.

Final Paper Submission: August 5, 2025

Submitted final paper will be distributed to review team for evaluation

Presentation in Japan, T.B.D. 2025

at the 11th UNISEC-Global Meeting (in-person)

Example of National/regional competition for MIC9
Please encourage potential applicants to join.

Application Submission : Deadline February-March, 2025

Submitted abstracts will be evaluated by regional review team

Presentation (online and/or in-person): sometime in March

Winner teams are selected by regional review team

Abstract Submission to MIC9: April 15, 2025

Winner teams submit polished abstracts to MIC9

Notification: ~~May 20~~, June 2, 2025

Selected Finalists submit a full paper by August 5 and make a final presentation in Tokyo, Japan

Evaluation Criteria

Originality	**Novel concept not yet realized or proposed, or a new implementation of an existing capability or service (25).**
Impact	**Impact on society / Potential to expand scientific knowledge / Strengthen deep space mission motivation (25).**
Engineering	**Technical description and solutions (20).**
	Operational (protocol, communication and interaction during experiment) (15).
Feasibility	**Programmatic (realistic- cost, development schedule, infrastructure requirements) (15).**

Function of MIC Coordinators

- **Mentor**: Offer advice and expertise, as well as facilitate the coordination of potential applicants, within your region and beyond.

- **Coordinate**: Liaise with the MIC Office to develop effective ways for participants to engage and apply for the MIC9 (e.g. organizing a regional seminar, using a space event in your region or disseminating information through an existing network).

- **Network**: Develop methods to help link students, researchers, policymakers, and business people in your region for the realization of mission ideas with an implication of contributing to a better future of your society or country/region.

Reasons for joining MIC

1) Capacity building via training opportunities.
2) Seek meaningful mission ideas.
3) Watch free lectures on deep space exploration.
4) Make a difference in the real-world. MIC can function as catalyst and result in projects which are innovative, affordable and technically reachable.
5) Receive exposure for your ideas. Develop your career profile and find potential future collaborators among a worldwide network.
6) Recognition of excellence; awards/prizes (TBA).

JOIN US!!

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