UNISEC-Global The 53rd Virtual Meeting

February 15th, 2025, 22:00-24:00
(Standard Japan time GMT +9)

The following report was prepared by UNISEC-Global Secretariat
February 15, 2025
Japan

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1 Opening Remarks

Prof. Herman Steyn, Stellenbosch University

Professor Steyn is an Emeritus Professor at the University of Stellenbosch and a distinguished expert in satellite engineering and control systems. He served as the head of Satellite Engineering and Control Systems and was the ADCS designer for SUNSAT, Africa's first fully indigenous satellite. From 1998 to 2001, he was the Principal Engineer and Team Leader for ADCS at Surrey Satellite Technology. He later became the Director of SunSpace from 2002 to 2009, where he led the ADCS development for South Africa's Sumbandila Earth Observation Microsatellite. In 2015, he co-founded CubeSpace, a company specializing in small satellite ADCS, where he continues to contribute. His expertise extends beyond national projects, having participated in multiple European FP7 space initiatives and the ESA Rosetta Mission.

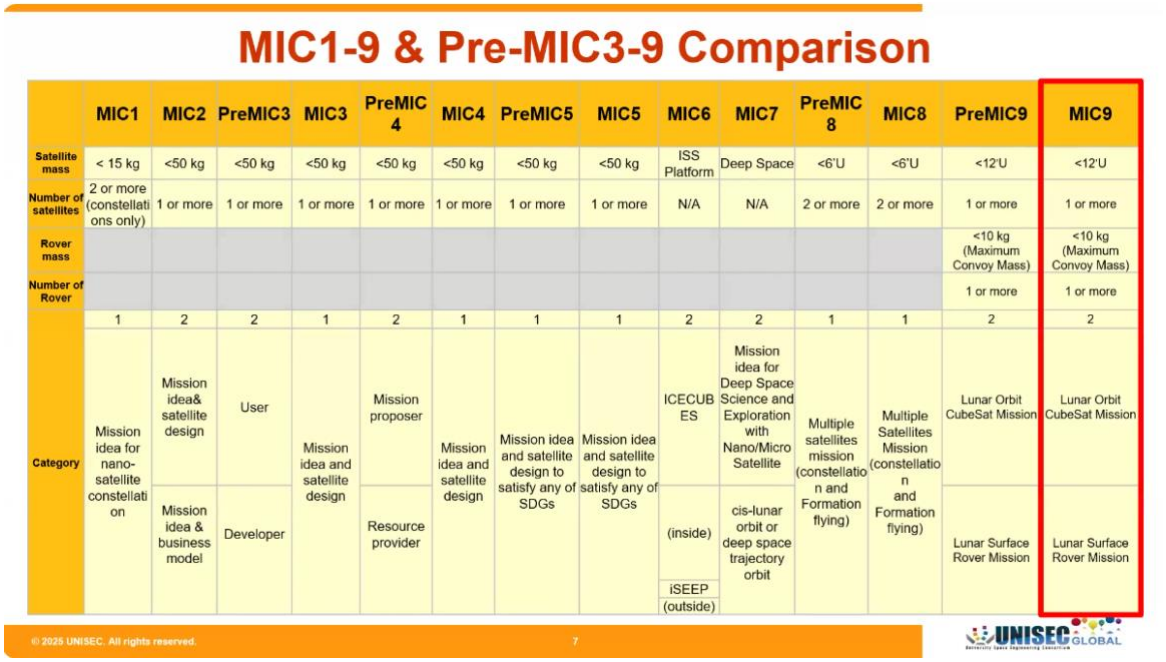
Pictured: Prof. Steyn while giving the opening remarks

Highlights:

- MIC9's theme is 'Lunar Mission'
- Two categories
  - Lunar Orbit CubeSat Mission (LOCM)
    - One or more CubeSats mission, to place in orbits around moon
  - Lunar Surface Rover Mission (LSRM)
    - Place rovers on the surface of moon
- **Important Dates**

Abstract Submission Due	**:**	**April 15, 2025**
Notification	**:**	**May 20, 2025**
Full Paper Submission (Finalists)	**:**	**August 5, 2025**
Final Presentation	**:**	**T.B.D. in Japan**

- Abstract Template
  - https://www.spacemic.net/pdf/mic9/MIC9_Mission_Requirements.pdf
- Selected finalists will make a presentation at MIC 9
- Background
  - Launched in 2010
  - To encourage innovative exploitation of micro/nano-satellites
  - Provides opportunity to present creative ideas and gain international attention
- 8 MICs and 5 Pre-Workshops organized from 2011-2024
- 5 books and 3 e-books published as IAA book series
  - https://iaaspace.org/product-category/pub/bookseries/
- If hosting national/regional competition, recommended to announce quickly
- Have a submission date by march 2025



Pictured: Prof. Steyn presenting about MIC1-9 and PreMIC3-9 Comparison

- Evaluation Criteria
  - Originality [25]
    - Novel concept not yet realized or proposed or
    - A new implementation of an existing capability or service
  - Impact [25]
    - Impact on society / Potential to expand scientific knowledge
    - Strengthen deep space mission motivation
  - Engineering [35]
    - Technical description and solutions [20]

      Operational (protocol, communication and interaction during experiment) [15]
  - Feasibility [15]
    - Programmatic (realistic- cost, development schedule, infrastructure requirements)
- Reasons for joining MIC
  - Capacity building via training opportunities
  - Seek meaningful mission ideas
  - Watch free lectures on deep space exploration
  - Make a difference in real world. MIC projects can inspire real world projects
  - Receive exposure and develop career profile
  - Recognition of excellence : awards, prizes etc.

2 ispace's Blueprint for Cultivating a Thriving Cislunar Economy

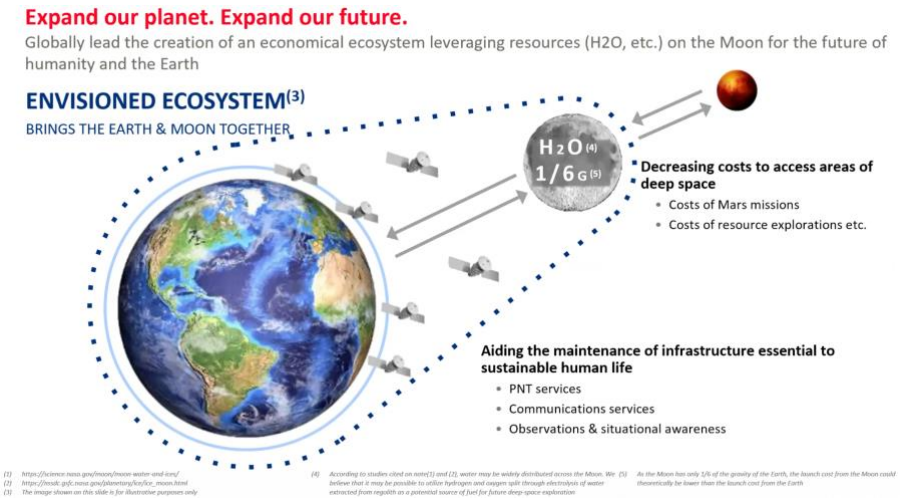
Masayuki Urata, ispace, inc.

Masayuki Urata is a Senior Manager in the Business Development Division at ispace, inc., based in Tokyo. Since joining ispace in 2021, he has been leading business development and global sales for lunar transportation services, providing tailored solutions for customers' lunar missions, primarily in the Indo-Pacific region. With extensive experience across Asia, Europe, and North America, Mr. Urata brings a global perspective to his role. He is also multilingual, further enhancing his ability to engage with international partners. ispace, a global lunar resource development company, envisions expanding humanity's presence beyond Earth and specializes in designing and building lunar landers and rovers. The company is committed to creating a sustainable future by offering high-frequency, low-cost transportation services to the Moon.

Pictured: Mr. Urata during his presentation

Highlights:

- ispace - Lunar Exploration company
- Providing lunar transportation service globally
- ispace became a member of UNISEC in 2023
- Sponsor of Mission Idea Contest
- Vision - "Expand Our Planet. Expand Our Future."
    - Creation of a world where the earth and the moon are one ecosystem
    - By establishing a new economy on the moon
- Envisions 1000 people living on the moon and 10,000 people visiting moon annually
- Current focus is on lunar water resources
- Aims to establish infrastructure
    - Support of various construction, manufacturing, energy and telecommunication
- Aims to expand living sphere into space
- More than 300 employees from over 30 countries, and 200+ engineers alone
- Core services
    - Payload Service
        - Transport customer's payload to the moon
    - Data Service
        - Customers receive data from payloads developed by ispace
        - Receive access to database accumulated by high frequence missions in future
    - Partnership Service
        - Support Customers' marketing by posting logo to the landers and rovers and other benefits



Pictured: Mr. Urata presenting about a sustainable space ecosystem for deep space exploration

- If we can utilize water resources on the moon, we can convert it to hydrogen and oxygen
- Since moon has 1/6G, moon can become our space station for deep space exploration

- Mission 1 (M1) - Lunar Landing
    - Launched first lunar lander in December 2022
    - Became the first private company to land on moon in April 2023
    - There was a software error related to altitude in the mission
        - result was hard landing
- Mission 2 (M2) – Lunar Exploration
    - Launched second lander in January 15, 2025
    - Successfully completed lunar flyby in February 15, 2025
    - Various payloads
        - Deep space radiation probe
        - Water electrolysis equipment
        - Self-contained module for food production experiments
        - Micro Rover from ispace
- Future plan is to conduct missions annually or multiple times a year
- Mission 3 (M3) – Apex 1.0 Lander
    - Scheduled for launch in 2026
    - Selected for NASA CLPS Task Order CP-12 as a member of Draper's Team
    - Ability to carry up to 300kg to lunar surface
        - More than 10x the capability of RESILIENCE lander
        - Delivery near the south pole on the far side of the moon
        - Two relay communication satellites
            - Will start commercial lunar relay services in the future
            - Beneficial for future CubeSat missions
- Mission 6 (M6) – development of series 6 Lander
    - Scheduled for launch in 2027
    - Approx. 80M USD budget
    - Largest budget of SBIR program

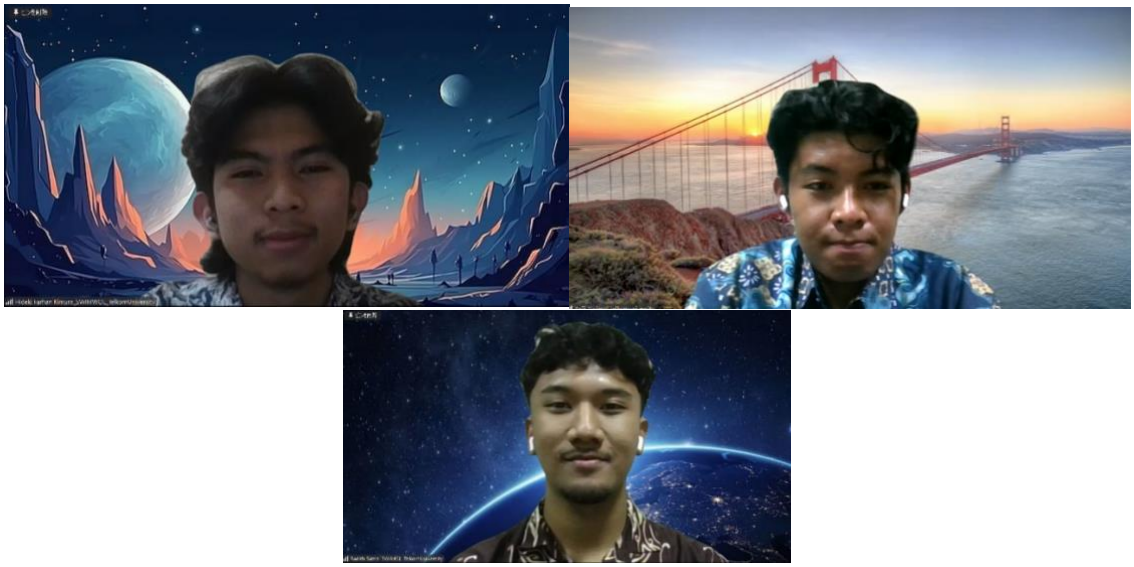
3 Taiwan-India Lunar Dust Analysis (TILDA) Mission

Yi-Hsuan Li, PreMIC9 Finalist

Pictured: Yi-Hsuan Li during her presentation

4 Solar Wind Impact and Measurement Observation on Lunar Surface (SWIMOL)

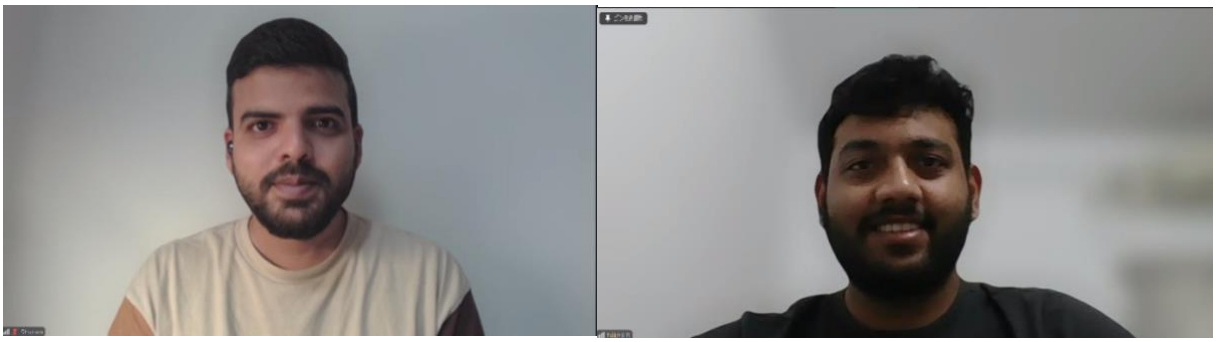
Hideki Farhan Kimura, Rafli Caesario Dimarta, Radith Satria Hariadi, PreMIC9 Finalist



Pictured: Hideki Farhan Kimura(left), Rafli Caesario Dimarta(right) and Radith Satria Hariadi(bottom) during their presentation

5 Taiwan-India Lunar Mapping Constellation (TILMaC)

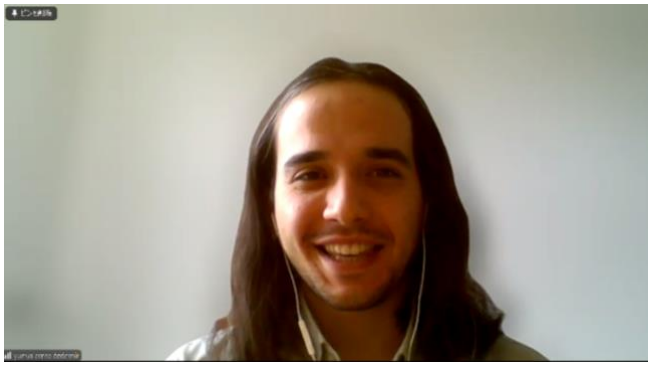
Shuvam Pal, Nikhil Riyaz, PreMIC9 Finalist



Pictured: Shuvam Pal(left) and Nikhil Riyaz(right) during their presentation

6 Lunar Multi-Rovar Lava Tube Exploration (LuMEX)

Yunus Ozdemir, PreMIC9 Finalist



Pictured: Yunus Ozdemir during his presentation

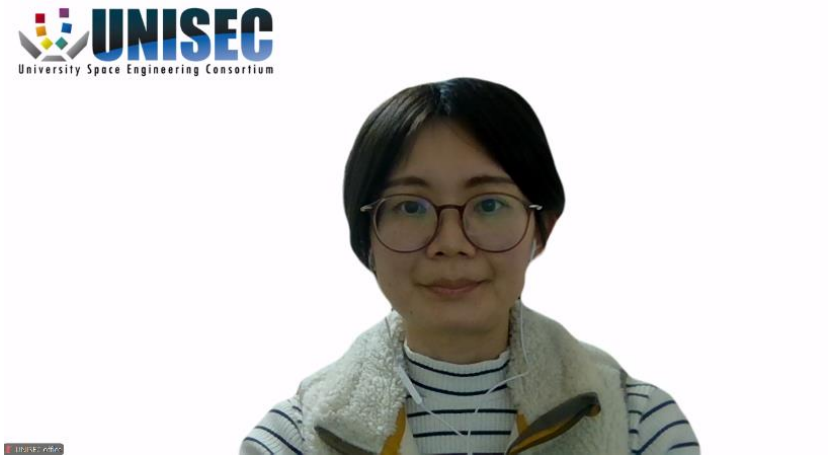
7 LunaScan (Lunar Observation Using Cubesat)

I Dewa Made Raviandra Wedagama, Najmi Aqilah Mamur Tanjung, PreMIC9 Finalist

Pictured: I Dewa Made Raviandra Wedagama(left) and Najmi Aqilah Mamur Tanjung(right) during their presentation

8 Announcement and Acknowledgment

Haruka Yasuda, UNISEC-Global



Pictured: Yasuda-San announcing the latest updates from UNISEC-Global

Highlights:

- **Nano-satellite IoT Constellation Program**
  - A new program launched by UNISEC-Global
  - Jointly design satellite bus (3-6U) with online guidance
  - Each satellite will be developed by each country with its own funding or if difficult, we will jointly search for international funds
  - All the satellites have the **same mission payload** to contribute to solving global problems or local problems as a constellation
  - Each country can have **one specific mission payload** for its own interest
  - Web: https://unisec-global.org/iot.html
  - Interested ones can submit the form here: https://forms.gle/WcdvQ9GiQV9rxssj6
  - Deadline: **February 25, 2025**
  - Contact: iot@unisec-global.org

- **The Mission Idea Contest**
  - The 9th Mission Idea Contest : to the Moon
    - Theme: Lunar Mission
    - https://www.spacemic.net/

- **Important Dates:**
    - Abstract submission due : April 15 2025
    - Notification : May 20, 2025
    - Full Paper submission due : August 5, 2025
    - Final Presentation : October 29 (T.B.C), 2025 at the 11th UNISEC-Global Meeting

- **CLTP14 (CanSat/ CubeSat Leader Training Program)**
    - Date: August 19 – 29, 2025
    - Venue: Nihon University, Chiba, Japan
    - Application Submission Due: April 22, 2025
    - CLTP14 Website: https://cltp.info/cltp14.html
    - Contact : secretariat@cltp.info

- **Call for proposal for 15th Nano-Satellite Symposium and the 12th UNISEC-Global Meeting 2026**
    - Next 11th UNISEC-Global Meeting will be held in Japan 2025 (Date : T.B.D)
    - Will call for proposal for venue of Nano-Satellite Symposium and UNISEC-Global Meeting in 2026
    - Important Dates
        - Proposal submission due : May 8, 2025
        - Proposal presentation : September 20,2025 (at Virtual UNIGLO meeting)
        - Local Chapter voting : October 2025 (notification T.B.D.)
    - Download the format here: https://unisec-global.org/support.html

- **Launch Opportunity: J-Cube**
    - Special Discounted opportunities
    - 1U, 2U, 3U, deployment from International Space Station
    - Collaborate with UNISEC-Japan's University
    - Technical support will be provided
    - Contact: info-jcube@unisec.jp , http://unisec.jp/serviceen/j-cube

- **Next Virtual Meeting**
    - Date: March 15, 2025
    - Theme: March 15, 2025
    - Host: UNISEC-Global

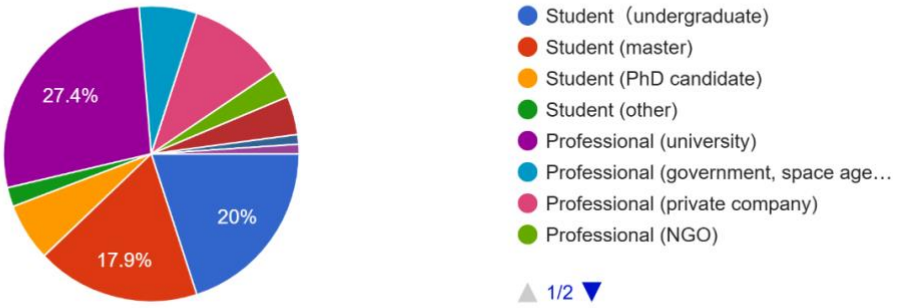
9 Participant Statistics

95 registered participants from **28** countries and regions for the 53rd Virtual UNISEC-Global Meeting.

Country	Registrants	Country	Registrants
Argentina	1	Peru	3
Bulgaria	4	Philippines	1
Burkina Faso	2	Portugal	1
Colombia	1	Romania	1
Dominican Republic	1	South Africa	10
Egypt	6	South Korea	6
India	7	Taiwan	13
Indonesia	5	Tanzania	5
Japan	10	Thailand	2
Lithuania	1	Turkey	3
Mauritania	1	UK	4
Mexico	1	USA	1
Morocco	1	Namibia	1
Nepal	2	Pakistan	1

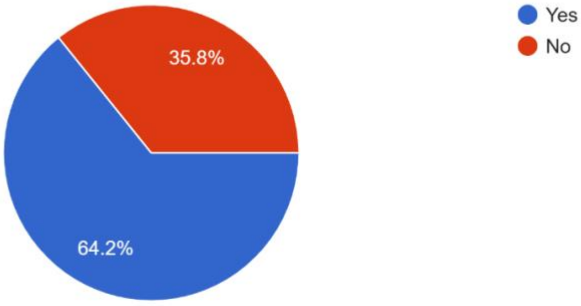
Student or professional?

95 responses



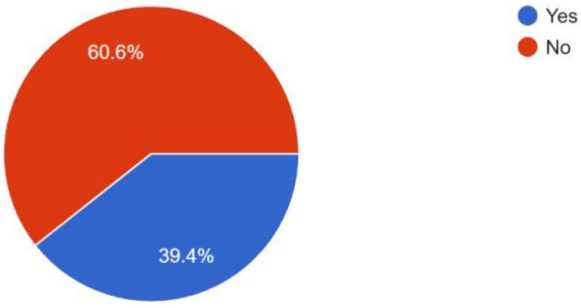
Have you participated in the UNISEC-Global Meeting previously?

95 responses



Have you participated in Mission Idea Contest?

94 responses

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Thank you