UNISEC-Global The 58th Virtual Meeting

July 19th, 2025, 22:00-24:00
(Standard Japan time GMT +9)

The following report was prepared by UNISEC-Global Secretariat
July 19, 2025
Japan

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1 Opening Remarks

George Maeda, ArkEdge Space

George Maeda graduated from the University of Maryland in 1981, with a BS degree in electrical engineering. He then received a master's degree in the same field from Cornell University in 1982. George has worked in AT&T Bell Laboratories, Panasonic and Kyushu University. At Kyushu Institute of Technology, he worked with Prof. Mengu Cho to bring the multi award-winning BIRDS program to over 15 countries helping to launch their first satellites for at least half of those nations. Currently, he works for a space startup ArkEdge Space as a business developer and is one of the regional coordinators for UNISEC-Global.

Pictured: Mr. Maeda while giving the opening remarks

Highlights:

- J-Cube is a joint operation between JAXA and UNISEC
- Two main reasons to choose J-Cube
    - Less-Cost than commercial launch service
        - Almost 3-4 times cheaper
    - Promotes international collaboration for your space project
- Need to team up with a Japanese University for J-Cube
- The agenda of this meeting is on J-Cube, with presentations from experts in this field

J-Cube Participants of FY 2024

(information from UNISEC)

Name of Satellite	Team	Size	Reference
Ten-Koh 3	Nihon University (Japan) Vietnam National Space Center (Vietnam)	3U	https://nu-cosmiccampus.blue/en https://aero.cst.nihon-u.ac.jp/okuyama/en/
MO-2	Kyushu Institute of Technology (Japan) Sapienza-Università di Roma (Italy)	1U	
BIRDS RPM	Kyushu Institute of Technology (Japan) Rwanda Space Agency (Rwanda) Paraguay Space Agency (Paraguay) Technical University of Moldova (Moldova)	3U	
Momiji & Advanced Engineer for Space Industry Program #6	Chiba Institute of Technology (Japan) Government Technology Agency :GovTech (Bhutan) College of Science and Technology: CST (Bhutan)	2U x 2	https://5th-momiji.cit-gardens.com/mission/

Pictured: Mr. Maeda sharing the history of J-Cube participants

- Birds-X is a project that used J-Cube option
- Learn about Birds-X : https://birds-x.birds-project.com

2 J-Cube Overview

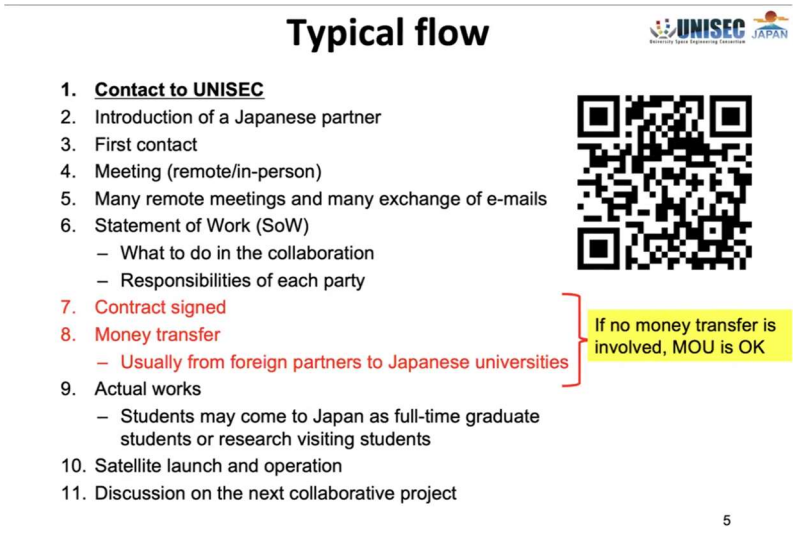
Prof. Mengu Cho, Kyushu Institute of Technology

Prof. Mengu Cho is the Professor and the Director of the Laboratory of Spacecraft Environment Interaction Engineering (LaSEINE) at Kyushu Institute of Technology. He received his B.S. and M.S. degrees from the University of Tokyo, Tokyo, Japan, in 1985 and 1987, respectively. Similarly, he received his Ph.D. degree from the Massachusetts Institute of Technology, Cambridge, in 1992. From 1992 to 1995, he was a Research Associate with Kobe University, Kobe, Japan; from 1995 to 1996, he was a Teaching Associate with the International Space University, Illkirch-Graffenstaden, France. Since 1996, he has been with the Department of Electrical Engineering, Kyushu Institute of Technology, Kitakyushu, Japan. He was an Assistant Professor in 1996, an Associate Professor in 1997, and a professor since 2004. He has been with the Department of Applied Science for Integrated System Engineering since 2010. His research interests include spacecraft-plasma interaction, space power systems, laser applications, and computational electromagnetics.

Pictured: Prof. Cho during his presentation

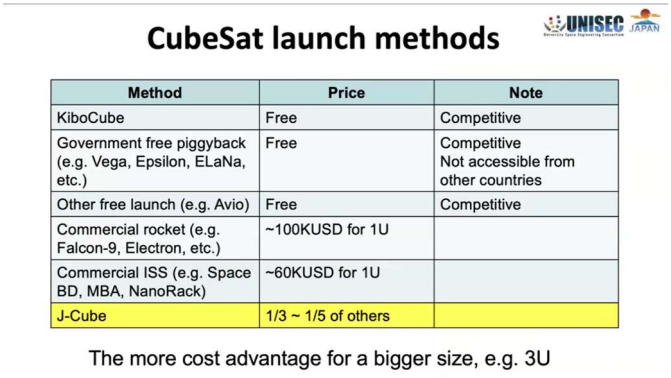
Highlights:

- J-Cube is a collaboration between JAXA and UNISEC
- Try to help emerging nations get their first CubeSat deployed into Low Earth Orbit
- Deployment from ISS
- J-Cube is different from KiboCUBE
    - J-Cube
        - A wider initiative curated with collaboration between JAXA and UNISEC
        - Not free, but low cost
        - Application is reviewed by the selection committee
        - Up to 3U
        - Collaboration restriction : Need to team up with a Japanese University
    - KiboCUBE
        - Collaboration between JAXA and UNOOSA
        - No-cost launch opportunity
        - Only 1 time per year with limited selection, extremely competitive
        - Size of CubeSat is 1U max
        - No collaboration restrictions
- Both J-Cube and KiboCUBE is conducted for capacity building purposes
- Target is emerging countries so space becomes diverse



Pictured: Prof. Cho presenting the typical flow of J-Cube

- Japanese partner can be searched on our own or through the help of UNISEC
- Multiple meetings to ensure proper collaboration
- Then, the Statement of Work (SoW) is defined
    - States the responsibilities of each party
- A contract is signed, which also governs any money exchanges
    - Contract is legally binding
    - Need assistance from the legal section of your organization
- Some points in the contract
    - Non-military use
    - UN registration
    - Export control
    - Payment due
    - Payment currency (usually Yen)
- UNISEC can assist in contract drafting
- Money exchange is usually from foreign partners to Japanese universities
- MoU is also okay, but there must be some form of written agreement
- Students may visit as full-time graduate students or research visiting students
- Collaboration also strengthens the network for future space missions
- Japanese universities are not launch brokers, and this is not done for money incentives
- The main aim is research, capacity building, and collaborative projects
- Suggested Schemes
    - A Joint development of CubeSat
        - Student exchange through the project
        - Students learn to work in different backgrounds
    - A satellite built outside Japan, but students come to Japan to study
        - Learn satellite development/testing/operation via hands-on
        - Serves as a liaison with the home country
    - A Satellite built by Japanese students coming from abroad
- Human exchange is recommended to make the collaboration more fruitful
- Examples
    - Maya 5 and Maya 6 were made by the Philippines
        - Students worked in Japan for final integration
        - Deployed from ISS on July 19, 2023, and worked successfully
    - KNACKSAT-II was made by Thailand
        - Is ready for flight
        - Will be more detailly explained by the upcoming speakers
    - MOMIJI made by Bhutan
        - In collaboration with Chiba Institute of Technology (ChibaTech)
        - Bhutan contributed a mission payload, rest was done by ChibaTech
        - A case without any money transfer



Pictured: Prof. Cho presenting the typical flow of J-Cube

- Pros of ISS deployment
    - Lower cost than rocket launch
        - J-Cube is even lower
    - Regular launch schedule
    - Moderate launch environment
    - No shock test requirements
    - Orbit is fixed
    - Easy for frequency coordination
    - J-Cube opens the door for international collaboration
- Cons of ISS deployment
    - Low altitude limiting the orbit lifetime
    - More strict safety requirements
- Application Process
    - Find a Japanese partner
        - UNISEC can help with matchmaking if you cannot find a Japanese partner
    - Define the Project Details
    - Sign a contract or MoU
    - Submit a J-Cube application **through the Japanese partner**
    - **Application deadline : December 12, 2025**
- Since ISS is reaching end of life, a time limit may be present on deployment
- Recommends applying early since 2026 capacity may be reduced
- UNISEC can be contacted for consultation
- For extremely preliminary matters, CubeSat Salon may also be contacted

3 CubeSat deployment from ISS/Kibo

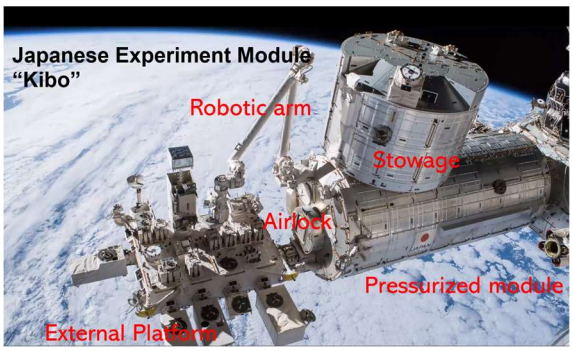
Izumi Yoshizaki, J-SSOD Project Manager, JAXA

Dr. Izumi Yoshizaki is a senior researcher at the ISS Science Project Office of the Japan Aerospace Exploration Agency (JAXA), specializing in crystal engineering and applied materials science. She earned her degree from the University of Tokyo, where she focused on materials science and crystallography. Over the course of her career, she has led several significant projects, including research on the homogeneous growth of SiGe bulk crystals using the traveling liquidus-zone method and the analysis of impurity-induced defects in protein crystals. Her work has been recognized for its contributions to space-based materials research, with experiments conducted aboard the International Space Station (ISS). Her research interests include crystal growth mechanisms, defect control, and numerical simulations for materials design, particularly under microgravity conditions.

Pictured: Dr. Yoshizaki during her presentation

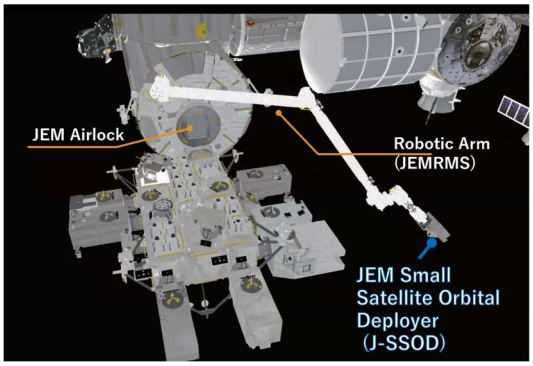
Highlights:

- Kibo is the Japanese Experiment Module
- 'Kibo' translates to hope in Japanese



Pictured: Dr. Yoshizaki explaining about the parts of Kibo Module

- Japanese Pressurized Module is the biggest pressurized module in ISS
- Conduct Life Science experiments, Physical Science Experiments, and Medical Experiments
- Contains a big stowage in the top
    - Helps keep the Kibo module clean
- 'External platform' is the biggest in the ISS
    - Used for earth and space observation
    - Can detect invisible spectrum rays' explosions, black holes or new stars
- Also has an Airlock and a robotic arm
- Robotic arm (JEMRMS) and deployer (J-SSOD) helps in CubeSat deployment



Pictured: Dr. Yoshizaki explaining about the parts of Kibo Module

- J-SSOD stands for JEM Small Satellite Orbital Deployer
- J-SSOD deployment procedure
    - CubeSat is brought to JAXA
    - JAXA installs the satellite into J-SSOD satellite install case
    - Satellite install case is packed in cargo transfer bag with cushioning
        - There is less vibration

        - Transferred to cargo transfer vehicle and to the ISS
        - Satellite install case is installed on the MPEP by crew members
        - Transferred outside from airlock
        - Robotic arm holds MPEP to transfer it to release point
        - Satellites deployed by the command signal sent from the ground
- Safety review is taken extremely seriously
- First CubeSats named “We Wish” and “Raiko” deployed from ISS in 2012
- Since 2012, 91 CubeSats from 32 countries deployed using J-SSOD
- Capacity building programs
    - J-Cube
    - KiboCUBE
    - KiboCUBE Academy
        - To provide opportunities for educational aspects through satellite lifecycle
        - Construction of relation in various countries and universities in Japan
- KiboCUBE is free of cost however very competitive
- JAXA has selected Space BD Inc. and Mitsui Bussan Aerospace Co. Ltd. as service providers
- Free lectures posted here
    - https://www.unoosa.org/oosa/en/ourwork/access2space4all/SatDevTrack_Webinars.html#Tag1
- Live sessions also held a few times a year
- Advantages of J-SSOD (compared to rockets)
    - Technical Support from experts (UNISEC, JAXA, service provider)
    - Frequent launch opportunities 3-4 times a year
    - Low vibration during launch compared to rockets
    - Can view the deployment in real time

4 KNACKSAT-2 : Multi-Payload CubeSat Platform for Rideshare Missions

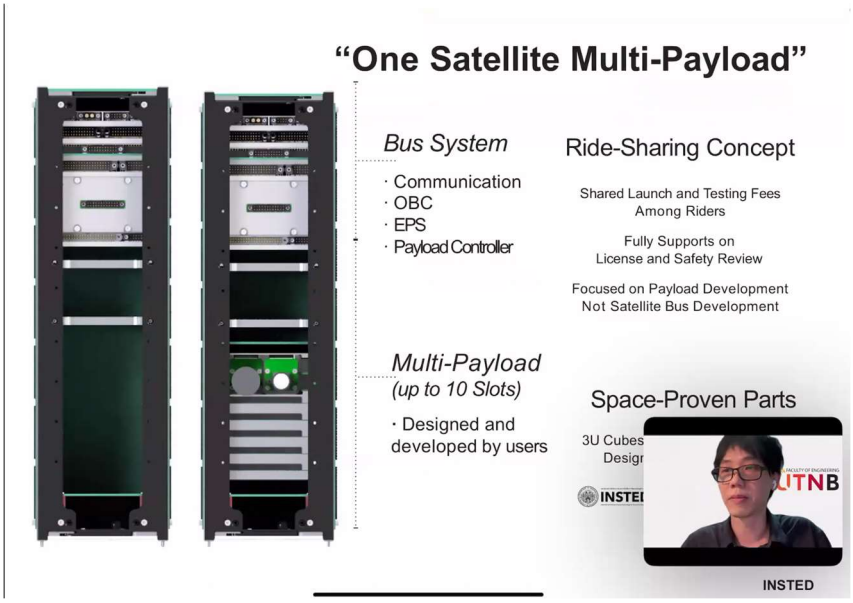
Phongsatorn Saisutjarit, King Mongkut’s University of Technology North Bangkok

Dr. Phongsatorn obtained a B.Eng. from the Department of Aeronautics and Astronautics, University of Tokyo, M.Eng. from the Department of Aerospace Engineering, Tohoku University, and PhD from the Department of Aeronautics and Astronautics, University of Tokyo. He has been a lecturer at the Department of Mechanical and Aerospace Engineering, King Mongkut's University of Technology North Bangkok (KMUTNB) since 2012. His research interest includes Nano/micro/pico-satellite Design and Development, Guidance, Navigation and Control of Spacecraft, Optimal Control, Attitude Control of Spacecraft. He is now the project manager of Thailand's first CubeSat "KNACKSAT".

Pictured: Dr. Phongsatorn during his presentation

Highlights:

- Launched KNACKSAT-17 years ago
    - 1U CubeSat
    - Launched from Falcon-9 rocket
- Realized that even 1U CubeSat is challenging for university or organizations in Thailand
    - Due to both technical and financial reasons
- Came up with Rideshare mission, a multi-payload concept
    - This way, launch cost can be shared
- Applied for J-Cube program 4 years ago
    - For launch support
    - Also to receive CubeSat design support
- "Songthaew" – A ride sharing concept in Thailand for road vehicles
- Joining Organizations
    - KMUTNB Pre-Engineering School
    - KMUTNB Rail Systems Cluster
    - NARIT (National Astronomical Research Institute of Thailand)
    - UiTM, Malaysia
    - UPHSD, Philippines
    - AIS (Advanced Info Service Public Company Limited)
- Alumni from KMUTNB and Kyutech launched have launched a small company inside university
    - Supported by NESPACE
    - Build CubeSat parts and components
- Learned safety review procedures from Kyutech staffs



Pictured: Dr. Phongsatorn presenting about payload sharing concept

- Satellite was finished two years ago
    - Delay due to frequency coordination
- Two IoT payloads developed by private companies integrated in KNACKSAT
- Mission is store & forward of ground data
- Another mission is Automatic Packet Reporting System
    - No mobile signals in the higher part of Thailand
    - Trains are not electrically powered
    - Installed a train tracking module to track trains around the country
    - Information of position and velocity is transmitted
    - If proved effective, next step is constellation

5 Q&A Session

Q/Ans:

Q: **Helen Haile: Does JAXA have some sort of funding for First Time Launch?**

A: ***Izumi Yoshizaki:*** *I am very sorry but we don't have any funding system. So please collect somebody from somewhere. Thankyou.*

Q: **Raul Martin Figueora Teran: We are very interested in the opportunity offered by the J-CUBE program to launch our 3U CubeSat CHASQUI II, developed at the National University of Engineering in Peru. Would it be possible to share an institutional contact email so we can follow up and explore a potential collaboration with you?**

A: ***Mengu Cho:*** *If you send the email to UNISEC through the official channels, UNISEC will do the matchmaking.*

Q: **Raul Martin Figueora Teran: Can a mission like CHASQUI developed from the University of National Peru be proposed independently for participation in a launch opportunity? Or is it necessary to be jointly proposed from a Japanese University?**

A: ***Mengu Cho:*** *You have to work with Japanese University in some way. There may be many ways to have a Japanese Partner. Find a Japanese partner, then the Japanese partner will apply. Japanese partner should contribute certain load in the project. Then you can talk with the Japanese partner on how they can participate. Then you can apply.*

Q: **Baseem Boshra: For the eligible institutions, in JCUBE we understood that any type of organization not just universities can apply. is it the same case for KiboCUBE ?**

A: ***Izumi Yoshizaki:*** *The KiboCUBE is for emerging countries. That is the big difference. Private companies, non-governmental companies and non-profit agencies are ineligible. So, the government organization, research institutes, universities and other public organizations are eligible to apply for this opportunity.*

Q: **Fama: The universities we're partnering with, in Japan, do they provide any financial support, or do they just focus on the technical know-how and guide us through the process?**

A: ***Mengu Cho:*** *Please do not expect any Japanese Universities to provide financial support. In the opposite way, if you want to launch the satellite and majority of satellite is made by you, it is you who have to pay for the money part. You have to talk with the Japanese partner. Sometime there is money exchange, and sometimes there is not. But generally, the money comes from foreign partner to the Japanese partner to pay the launch cost.*

Q: **Helen: If I want to apply the application for J-Cube, the application process and working process. How does it start? Should I go to UNISEC? Should I go to Kyutech? Should I go to JAXA? For the whole application and collaboration process.**

A: ***Mengu Cho:*** *Go to UNISEC first.*

Helen: *I want to work with Kyutech. So, if I want to approach the university directly, would it be easier? Or should I do UNISEC or institution?*

Mengu Cho: *If you want to work with Kyutech, please send the email to UNISEC. Then UNISEC will immediately*

contact Kyutech.

Helen: *Because Kyutech has this BIRDS project, and UNOOSA scholarship under 35. So, I need to do everything through UNISEC?*

Mengu Cho: *UNISEC will handle the J-Cube activity. So UNISEC has to know what is going on. So, if you already have the university in mind, you contact UNISEC saying you want to work with university A. UNISEC will immediately contact university A. We are a small company so that doesn't take long. And then, university A and you can immediately start the project.*

Helen: *You know, the BIRDS project?*

Mengu Cho: *That is different from J-Cube.*

Helen: *Okay.*

Q: **Raul Martin Figueora Teran: Could you please let me know if JAXA currently has any research programs or internships for international students?**

A: ***Izumi Yoshizaki:*** *There is a section in JAXA that accepts students from foreign countries. I have no idea how they communicate with foreign countries. It is about space science, and not about CubeSat.*

Tetsuhito Fuse: *The opportunity is very limited. Only astronomy and space science section have this kind of activity. This is collaborative research activity and it is not open to everybody.*

6 Announcement and Acknowledgment

Ms. 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 for "STEP 3: Hearing session with stakeholders": July 31, 2025**
- The online lecture series will start on **July 24**
- Contact: iot@unisec-global.org

- **The Mission Idea Contest**
  - The 9th Mission Idea Contest: to the Moon
    - Theme: Lunar Mission
    - https://www.spacemic.net/
    - 25 abstracts were submitted from 15 countries
    - 10 finalists and 4 semi-finalists were selected
  - **Important Dates:**
    - Full Paper submission due : August 25, 2025 (Finalists)
    - Final Presentation : November 1, 2025 at the 11th UNISEC-Global Meeting in Tokyo
    - Contact: info@spacemic.net

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

- **The 11th UNISEC-Global Meeting**
  - Date: November 1 – 4, 2025
  - Venue: The University of Tokyo, Japan
  - https://www.unisec-global.org/meeting11.html
  - Registration is open
  - Early bird registration is until September 1, 2025
  - **Tentative Program (T.B.C)**
    - November 1: Opening Ceremony, The 9th Mission Idea Contest: to the Moon, Reception
    - November 2: Regional Report, Nano-satellite IoT Constellation Program Workshop
    - November 3: Regional Report, Deep Space Workshop, Student Session, POC Meeting
    - November 4: Supporter Presentation, Industry Visit, Gala Dinner

- **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
  - Will call for proposal for venue of Nano-Satellite Symposium and UNISEC-Global Meeting in 2026
  - **Important Dates**
    - Proposal submission due : September 30, 2025
    - Proposal presentation : October, 2025 (at the Virtual UNISEC-Global meeting)
    - Local Chapter voting : October, 2025
  - Download the format here: https://unisec-global.org/support.html

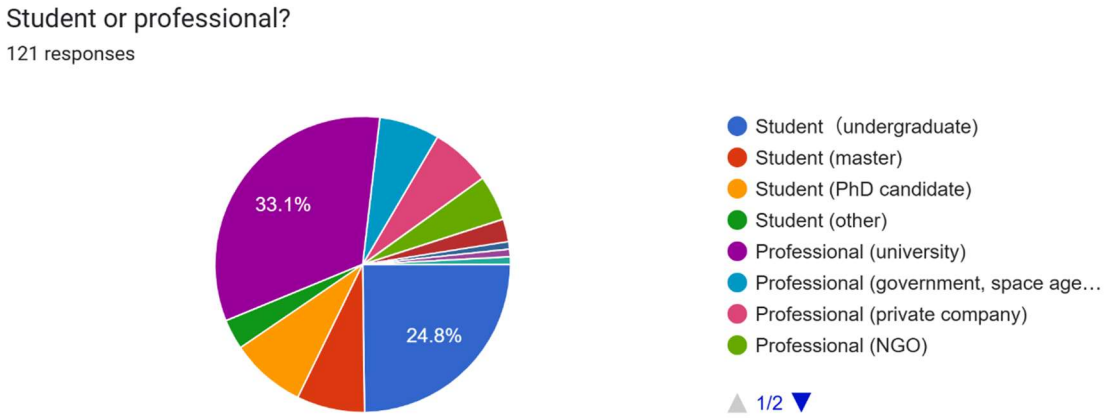
- **Launch Opportunity: J-Cube**
  - Special Discounted opportunities
  - 1U, 2U, 3U, deployment from International Space Station
  - Collaborate with UNISEC-Japan's University
  - Technical support will be provided
  - Contact: info-jcube@unisec.jp , http://unisec.jp/serviceen/j-cube

- **Next Virtual Meeting**
  - Date: August 16, 2025
  - Theme: T.B.D
  - Host: UNISEC-Bulgaria

7 Participant Statistics

121 registered participants from **34** countries and regions for the 58th Virtual UNISEC-Global Meeting.

Registrants			
Country/Region	**Registrants**	**Country/Region**	**Registrants**
Argentina	1	Nepal	7
Belarus	1	Peru	19
Bosnia and Herzegovina	1	Philippines	1
Bulgaria	2	Portugal	1
Burkina Faso	4	Romania	1
Burundi	2	Russia	1
Colombia	3	Somalia	2
Côte d'Ivoire	3	South Africa	1
Dominican Republic	1	South Korea	2
Egypt	6	Taiwan	2
Gambia	1	Tanzania	2
Guatemala	1	Thailand	14
India	5	Tunisia	3
Japan	14	UK	3
Kenya	1	Uruguay	1
Laos	1	USA	4
Mexico	7	Zambia	3

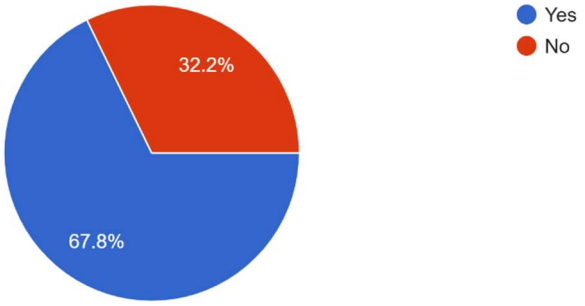


Have you considered applying to J-CUBE?

121 responses

Have you participated in the UNISEC-Global Meeting previously?

121 responses



Thank you