



**United Nations/Japan Cooperation Programme on CubeSat Deployment from
the International Space Station (ISS) Japanese Experiment Module (Kibo)
“KiboCUBE”
Eighth Round**

Announcement of Opportunity

2 June 2023

- 1. Thematic Area:** Access to Space for All – Satellite Development Track
- 2. Title:** United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station (ISS) Japanese Experiment Module (Kibo) “KiboCUBE”
- 3. Subject:** Realization of a CubeSat deployment opportunity from the International Space Station (ISS) Japanese Experiment Module “Kibo”.
- 4. Implementation:** KiboCUBE is executed by the United Nations Office for Outer Space Affairs (UNOOSA) and Japan Aerospace Exploration Agency (JAXA).
- 5. Duration:** June 2023 – December 2025
- 6. Deadline for Applications:** Applicants must submit fully completed application forms to UNOOSA by **31 December 2023 23:59 Central European Time (CET, UTC+1)**. UNOOSA will notify applicants of the outcome of their application by the middle of February 2024.
- 7. Expected Profile of Applicants:** Government organisations, research institutes, universities, and other public organisations.
- 8. Number of Opportunities for Deploying CubeSat:** UNOOSA and JAXA will select a maximum of two entities. Each selected entity will deploy a single One Unit (1U) CubeSat.
- 9. Language of the Programme:** English
- 10. Brief Programme Description:**

UNOOSA promotes international cooperation and capacity-building in the areas of space technology and its applications, especially in developing countries, within the framework of the United Nations Programme on Space Applications. In 2018, UNOOSA launched the Access to Space for All initiative, which enables communities from all over the world to use and benefit from space technologies and applications.

The Japan Aerospace Exploration Agency (JAXA) carries out Japan’s space programme by conducting research and development on launch systems, satellites, and human space facilities. JAXA developed the International Space Station (ISS) Japanese Experiment Module “Kibo” and has been operating it since 2008. Kibo’s unique capability is comprised of an airlock system and a robotic arm. The first orbital deployment of CubeSats from Kibo was successfully conducted through the Small Satellite Orbital Deployer (J-SSOD), developed by JAXA, in October 2012. Since then, nano-satellites and CubeSats from numerous countries

around the world have been deployed from Kibo, which has contributed to the development of technology as well as capacity-building, particularly in space engineering.

In line with the mission and objectives of the Access to Space for All initiative and JAXA’s demonstrated commitment to promoting space science and technology in developing countries, KiboCUBE aims to lower the threshold for countries to engage in space activities and contribute to national capacity development in spacecraft engineering and design, as well as inspire the next generation.

As of May 2023, five satellites from Kenya, Guatemala, Mauritius, Moldova, and Indonesia have been deployed into space through KiboCUBE. Three more CubeSats are being developed: one by a consortium team from Costa Rica, Guatemala, and Honduras; one by Mexico; and one by Tunisia. The KiboCUBE programme has contributed to the capacity building of all these countries, especially where the deployed CubeSats were the first satellites of each respective nation. The experience and technology acquired from the development of these CubeSats are being applied to future space activities in the countries.

11. Schedule of the KiboCUBE Programme

(A) Programme Schedule

Application Submission	31 December 2023
Selection and notification of shortlisted applicants	Mid-February 2024
Updated application submission	31 May 2024
Selection and notification of winner(s)	June 2024
Preparation period, including technical coordination	Approximately 15-18 months (subject to the progress of the CubeSat development)
Safety Review and Compatibility Review	To be determined and arranged by JAXA, taking into account the progress of the CubeSat development.
Deployment	Expected in 2026, subject to the ISS operational requirements and progress of the CubeSat development.
Reporting to UNOOSA and JAXA	<ul style="list-style-type: none"> - A report on the CubeSat mission, related activities, and any publications about the CubeSat mission must be submitted every 6 months. - A report on the operational results shall be submitted no later than 3 months after the deployment of the CubeSat. - A final report on the CubeSat mission and related activities must be submitted no later than 3 months following the re-entry of the CubeSat mission.

It must be noted that:

- The application process consists of two stages. In the first stage, entities shall describe the cost elements of the CubeSat. If the entity is shortlisted, the entity will have 3 months to submit a detailed explanation of how the budget will be acquired.
- UNOOSA and JAXA may ask for further information on the applications.
- The number of opportunities and the launch and deployment schedule may change due to constraints on the ISS operation or for any other reason.

- If the development of the CubeSat does not meet the Programme Schedule within the preparation period, JAXA may terminate the provision of the deployment.

(B) Programme Milestone

1) Application Phase: June - December 2023

- UNOOSA and JAXA will organize a series of webinars to guide participants on the development process and how to prepare the application. Participation in the preparatory webinars is recommended.
- Applying entities must submit their completed application forms by the requested deadline.

2) Selection Phase: January - May 2024

- UNOOSA and JAXA will shortlist a maximum of two entities and notify them by mid-February 2024.
- UNOOSA and JAXA will interview the shortlisted entities in March and/or April 2024.
- The shortlisted entities must submit an updated application form and review and confirm the contents of the legal agreement with JAXA by 31 May 2024.
- UNOOSA and JAXA will select a maximum of two awardees, who will be requested to sign the legal agreement by 1 July 2024.

3) Development Phase: June 2024 onwards

Technical coordination in preparation of the CubeSat deployment between JAXA and the awardee

Safety Review

- The awardee must undergo a JAXA safety review.
- The materials for the safety review must be provided to JAXA no later than 30 days prior to the date of the review. The awardee must complete the functional and environmental tests and include the results in the safety review materials.

Compatibility Review

- JAXA and the awardee will review the compatibility of the CubeSat with all interfaces, such as the mechanical, electrical, and thermal interfaces between the CubeSat and the deployment structure, as well as with the launch environment, including vibration frequencies and acceleration rates. JAXA will confirm applicable testing procedures at this stage.
- JAXA may require data gathered from the test and inspection conducted during the CubeSat development phase as input for the compatibility tests.

Critical Readiness Review

- The awardee will conduct the critical readiness review. UNOOSA and JAXA may attend the review as an observer.

- 4) Handover and Transportation Phase: 3 to 4 months prior to its Launch to the ISS.
 - The awardee shall deliver its CubeSat to a facility specified by JAXA (e.g., Tsukuba Space Center) for the handover to JAXA. The battery of the CubeSat shall be fully charged before delivery. After the handover, JAXA will manage the maintenance work on the satellite.
 - 3 months prior to launch, JAXA will transport the CubeSat to the launch site and be responsible for the operational work at the launch site.
- 5) Launch and Deployment Phase: Launch will be 1 to 2 months prior to the deployment from the ISS.
 - JAXA will arrange the launch of the CubeSat to the ISS/Kibo by a designated space transportation vehicle, and deployment of the CubeSat from Kibo.
 - On the day of the deployment, JAXA will organize a deployment event with a video broadcast from the ISS.
- 6) Post-deployment Phase:
 - The awardee will conduct satellite operation, data evaluation, and space object registration.
 - The country of the awardee will register the CubeSat either in accordance with the Convention on Registration of Objects Launched into Outer Space or, if the country of the Selected Entity is not a party to the Convention, in accordance with General Assembly resolution 1721B (XVI).
- 7) Reporting Phase:
 - The awardee shall submit the following reports to UNOOSA and JAXA:
 - A report on the CubeSat mission, related activities, and any publications about the CubeSat mission must be submitted every 6 months.
 - A report on the operational results no later than 3 months after the deployment of the CubeSat.
 - Final report on the results of the mission no later than 3 months after re-entry of the CubeSat.

12. Eligibility Criteria

This Opportunity is open to entities located in developing economies and economies in transition that are Member States of the United Nations:

- Government organisations, research institutes, universities, and other public organisations are eligible to apply for this Opportunity. Private companies, non-governmental, or non-profit agencies are ineligible.
- Entities located in countries that do not have satellites in orbit at the time of the opening of this application (according to the information on the United Nations Register of Objects Launched into Outer Space) are particularly encouraged to apply.

To assess eligibility, UNOOSA and JAXA will use the country classification list of developing economies and economies in transition indicated in the joint report, *World Economic and Situation Prospects* published by the United Nations Department of Economic and Social Affairs and other related organisations: <https://desapublications.un.org/file/1098/download>

Entities applying for this Opportunity are responsible for the development of their CubeSat, including the designing, manufacturing, testing, and verification of their CubeSat, as well as its operation and utilization after the deployment. Therefore, to be eligible for this Opportunity, applying entities must demonstrate in their application that they have sufficient capability and resources in the following areas:

- CubeSat design, manufacture, testing, and operation, in accordance with JAXA requirements.
- Transportation of the CubeSat to JAXA (planning, budget, export/import control etc.).
- Coordination of all radio frequency-related matters in full compliance with the applicable International Telecommunication Union radio regulations.
- Development of the ground station facility with a radio frequency license.
- Registration of the CubeSat in the Register of Objects Launched into Outer Space.

Teams are allowed and encouraged to partner with external entities that can support their development, even if those entities are not eligible themselves. These partnerships should be clearly written as “External Support” in the Application Form and external partners shall not be included in the team.

13. Selection Criteria

UNOOSA and JAXA will nominate members of the Selection Board, which will review the incoming applications according to the following criteria:

- Completeness of application form.
- Scientific and technical value of the CubeSat mission, as determined by either:
 - (a) The CubeSat mission’s expected contribution to developing human knowledge and capacity to undertake activities in the field of space science and technology in the applying entity’s home country or abroad; or
 - (b) The CubeSat mission’s expected contribution to enhancing research and development through the technological demonstration of deploying and operating the CubeSat in the applying entity’s home country or abroad.
- Novelty of the mission (the CubeSat mission shall not copy any previous development design of the applying entities, if any).
- Demonstrating that the applying entity itself and the intended design and function of the CubeSat are consistent with peaceful exploration and use of outer space, and are not intended solely for commercial, political, or religious purposes.
- Link between the CubeSat mission and the Sustainable Development Goals.
- Capability of the team to comply with the [JEM Payload Accommodation Handbook -Vol.8- Small Satellite Deployment Interface Control Document \(JX-ESPC-101133-E\)](#) and any other technical requirements outlined by UNOOSA and JAXA.
- Compliance with the Programme Schedule, including the deployment schedule.
- Outreach, communication, and dissemination plan about the CubeSat mission.
- The team composition of proposals with the same score will be compared and the proposal with a larger number of women will be ranked higher.
- Compliance with the [Space Debris Mitigation Guidelines](#) and [Guidelines for the Long-term Sustainability of Outer Space Activities](#).

14. Roles and Responsibilities

The awardee shall conduct the following activities:

- Update the overall schedule/timeline for the CubeSat development and its mission to JAXA.
- Attend the technical coordination meetings arranged by JAXA.
- Submit the J-SSOD/ satellite interface verification record (same document that will be submitted to JAXA for the safety assessment to verify compliance with JAXA technical requirements).
- Design, analyze, manufacture, and test the CubeSat and its supporting systems, including verification of the compatibility with the technical requirements, except for the compliance tests that will be conducted by JAXA.
- Conduct all radio frequency-related matters in full compliance with the applicable International Telecommunication Union radio regulations.
- Verify the safety assessment, as well as the compliance of the CubeSat design with JAXA’s technical requirements for the safety assessment, and prepare the materials and operations required for the safety review.
- Deliver the CubeSat to the location specified by JAXA (expected to be Tsukuba Space Center) for the compliance tests (JAXA will conduct the fit-check and outgassing test) and conduct a visual inspection, uninstall non-flight items for the compatibility tests on site in Japan and handover the satellite to JAXA.
- Operate the CubeSat, including tracking control and data acquisition, after deployment from Kibo.
- Register the CubeSat either in accordance with the Convention on Registration of Objects Launched into Outer Space or, if the country of the Selected Entity is not a party to the Convention, in accordance with General Assembly resolution 1721B (XVI).
- Conduct outreach activities to promote capacity-building and STEM education related to the CubeSat project.
- Contribute to the public relations and promotion activities of UNOOSA and JAXA including responding to press inquiries about the CubeSat and preparing information materials upon request from UNOOSA and JAXA.
- Inform UNOOSA and JAXA of any publication that uses the outcome of this CubeSat mission, including PhDs, Master theses, publications in journals, and conference or workshop proceedings and presentations. The awardee is requested to include the following sentence in their peer-reviewed publications, contributions to congresses, and other forms of written dissemination:
“The authors would like to thank the United Nations Office for Outer Space Affairs and the Japan Aerospace Exploration Agency for the Access to Space for All Initiative: Programme on CubeSat deployment from the International Space Station Japanese Experiment Module Kibo: KiboCUBE for their support in enabling the deployment of the CubeSat.”

Please note that the awardee shall bear any costs associated with the activities above, including employment costs, travel expenses, and transportation fees.

UNOOSA and JAXA encourage the awardee to submit the model of their receiver using GNU Radio Companion (GRC) format for publication. This will enable other entities to access the telemetry of the satellite and participate in efforts to track the CubeSat developed by the awardee. UNOOSA will consider publishing the telemetry (e.g., pictures or other data), subject to consultation with JAXA and the selected entity.

15. Terms and Conditions

By submitting a completed Application, the applicant agrees to the following:

- The awardee will enter into an agreement (contract) with JAXA to resolve any and all practical, logistical, technical, and/or legal issues related to the deployment of the CubeSat from Kibo that

may arise between JAXA and the awardee. The agreement (contract) will contain terms to define, *inter alia*, the scope of work, the necessary conditions for the deployment, allocation of costs, compliance rules, handling of technical information and test results, confidentiality, security issues of JAXA facilities, declarations of immunity and hold harmless on the part of JAXA, cross-waivers of liability for damages sustained by either party, third party liability claims, registration of the CubeSat space object, and apportionment of other responsibilities arising under United Nations treaties on outer space and dispute resolution procedures.

- This agreement (contract) shall also be consistent with the “Agreement among the Government of Canada, Government of Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America, concerning Cooperation on the Civil International Space Station,” signed on January 29, 1998 (hereinafter referred to as International Government Agreement (IGA). Articles set forth in the IGA, including but not limited to the Cross-Waiver of Liability, shall be applied to the Selected Entity through this agreement (contract).
- JAXA does not in any way guarantee the launch date, the launch success, the deployment date, and/or the deployment success, nor will JAXA be in any way responsible for the overall success of the mission. The specific date of the launch and deployment will be fixed by negotiation between JAXA with the awardee after the assignment of the launch.
- JAXA may terminate the provision of the deployment opportunity at any time, should the awardee violate the terms and conditions as described in this Announcement of Opportunity and/or the separate agreement (contract) and/or when the awardee cannot meet the Programme Schedule.

16. Application Submission

Applicants must email the fully completed application documents including the Letter of Endorsement from the head of their entity (Document 1) and KiboCUBE Mission Application Form (Document 2) to UNOOSA by 31 December 2023 23:59 Central European Time (CET, UTC+1) to the following address:

unoosa-access-to-space@un.org

In the email, applying entities should attach a PDF version (pdf.) Please note that the OOSA email account only accepts emails with a size limit of up to 10 M bytes. Submission of all necessary documents is mandatory.

Applicants are required to notify their country’s permanent mission in Vienna ([Permanent Missions to the United Nations \(Vienna\) \(unodc.org\)](#)) of their application submission to UNOOSA. If they cannot locate the permanent mission’s information in the above link, please refer to Geneva ([Member States | UN GENEVA](#)) or New York ([e-BlueBook \(unmeetings.org\)](#)).

UNOOSA or JAXA reserve the right to request additional information from applicants, if necessary, to assist in the evaluation of the application. All award decisions are final and made at the sole discretion of UNOOSA and JAXA and are not subject to challenge or review.

17. United Nations Privileges and Immunities

Nothing in or relating to this Announcement of Opportunity shall be deemed a waiver, express or implied, of any of the privileges and immunities of the United Nations, including its subsidiary organs.

18. Additional Information

The latest information on KiboCUBE will be made available on the website of UNOOSA at:
https://www.unoosa.org/osa/en/ourwork/access2space4all/KiboCUBE/KiboCUBE_Index.html

For further information regarding KiboCUBE and applications, please contact
unoosa-access-to-space@un.org