

Access to Space for All Initiative KiboCUBE 7th Round AO Webinar





Access to Space for All Initiative

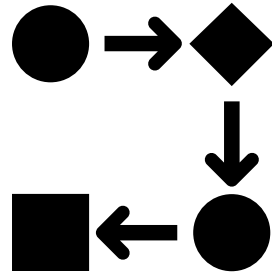
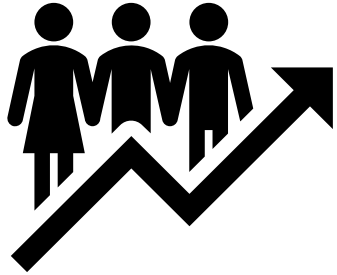


*The goal of the **Access to Space 4 All Initiative** is to provide research and orbital opportunities for UN Member States to access space and to ensure that the benefits of space, in particular for sustainable development, are truly accessible to all*

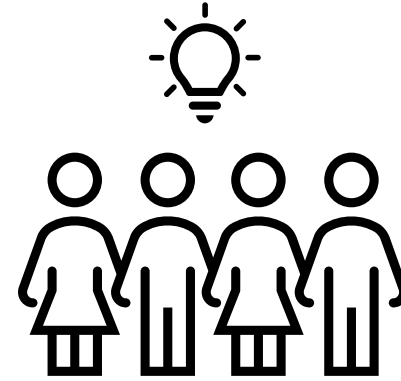




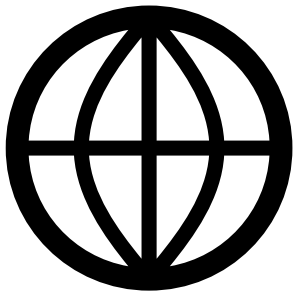
Access to Space for All Initiative



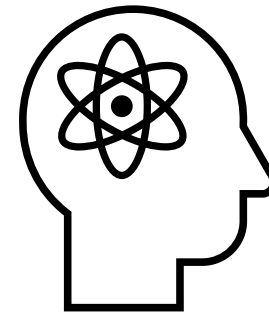
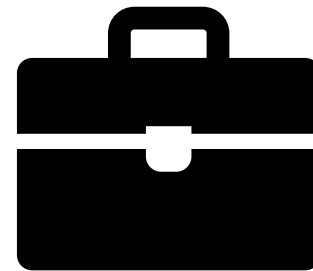
Hands-on Capacity from A-Z
Responsible & Sustainable Way



Social Impact: To your country,
region and young generations



Fosters international cooperation



Provides cutting edge skills for
jobs and other opportunities



Access to Space for All Initiative



Space is relevant to the SDGs!

The 2030 Agenda for Sustainable Development <https://sdgs.un.org/2030agenda>

To learn more about the SDGs go to <https://sdgs.un.org/goals>

UNOOSA SDGs page

<https://www.unoosa.org/oosa/en/ourwork/space4sdgs/index.html>



Access to Space for All Initiative

Goals

4

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

← Prev Next →



Target

4.4

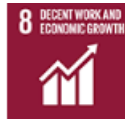
By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

Goals

8

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

← Prev Next →



Target

8.2

Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labour-intensive sectors



Target

8.3

Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization and growth of micro-, small- and medium-sized enterprises, including through access to financial services

Goals

9

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

← Prev Next →



Target

9.1

Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all



Target

9.5

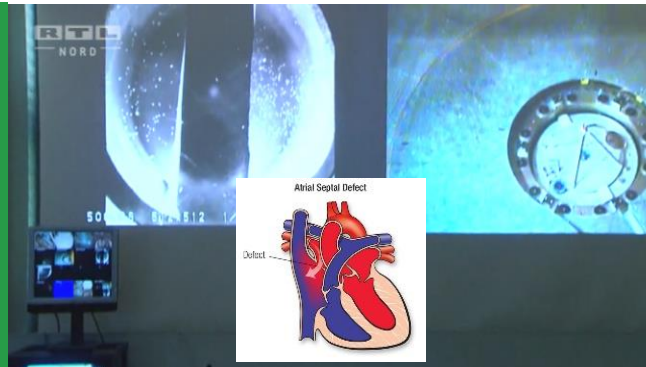
Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending



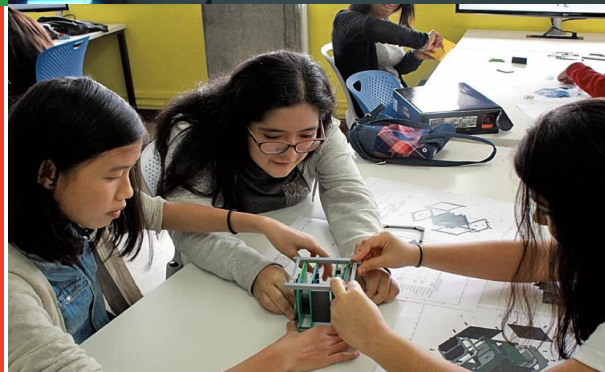
Access to Space for All Initiative

UNITED NATIONS
Office for Outer Space Affairs

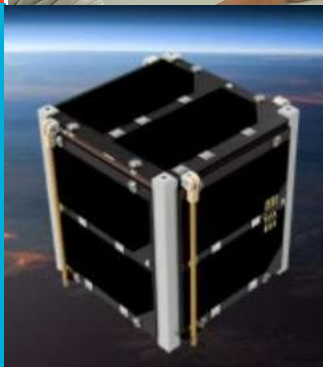
3 GOOD HEALTH AND WELL-BEING



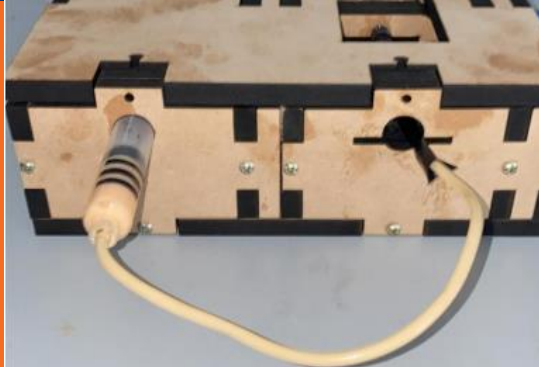
5 GENDER EQUALITY



6 CLEAN WATER AND SANITATION



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

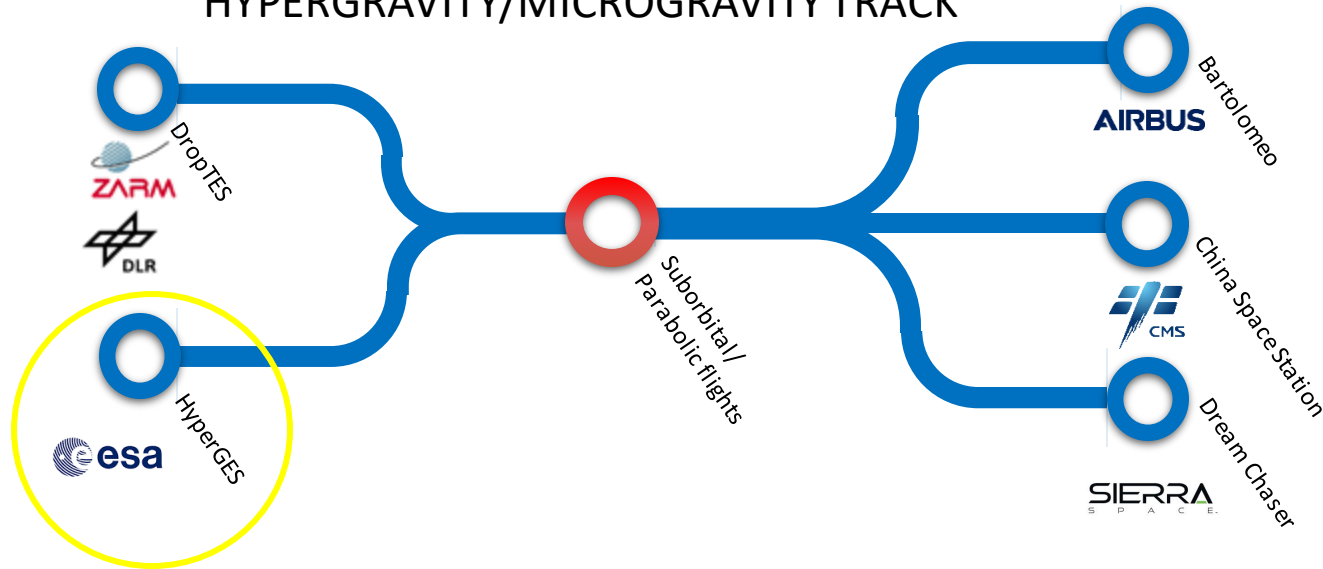




Access to Space for All Initiative

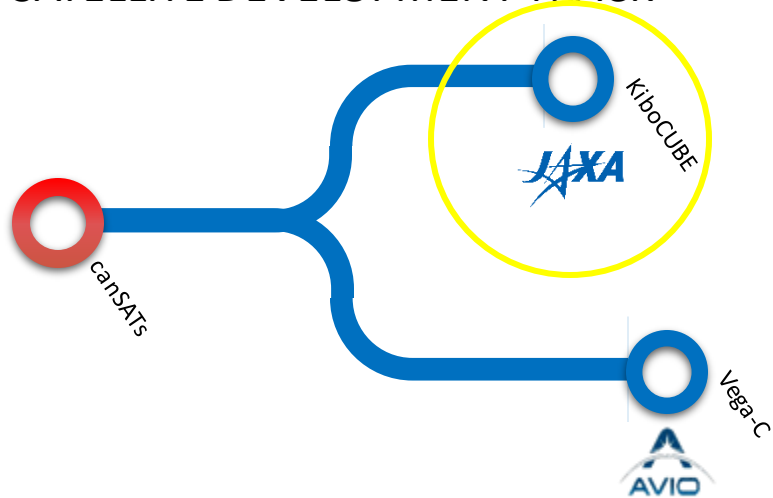


HYPERGRAVITY/MICROGRAVITY TRACK

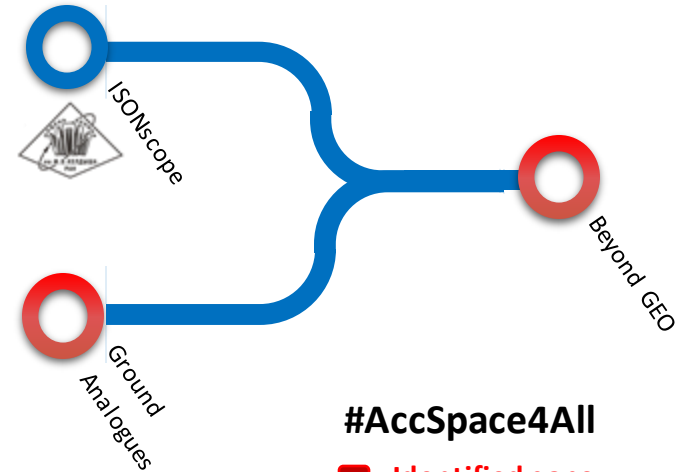


Opportunities are OPEN!
 KiboCUBE : 31 Dec 2021
 HyperGES: 28 Feb 2022

SATELLITE DEVELOPMENT TRACK



EXPLORATION TRACK

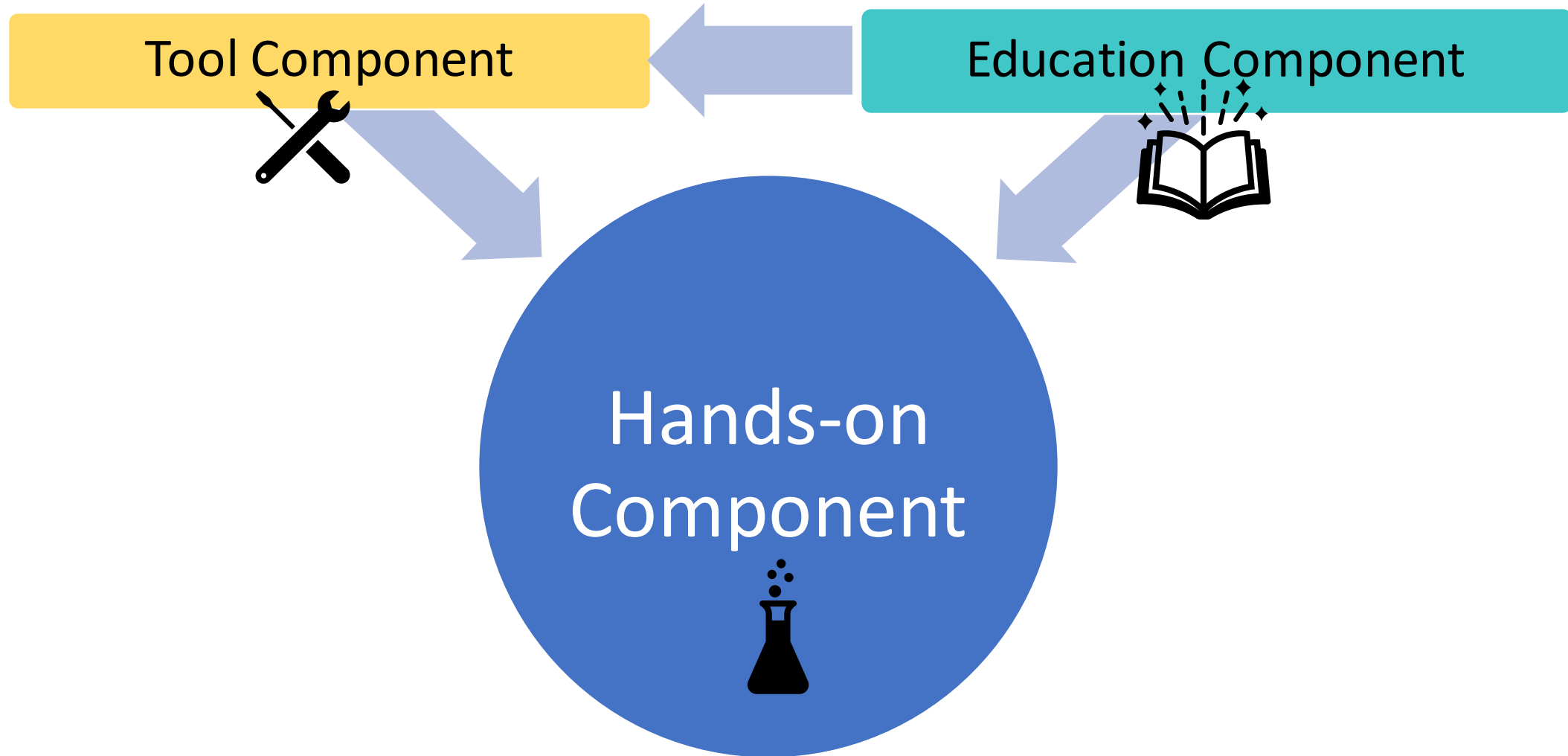


#AccSpace4All

■ Identified gaps



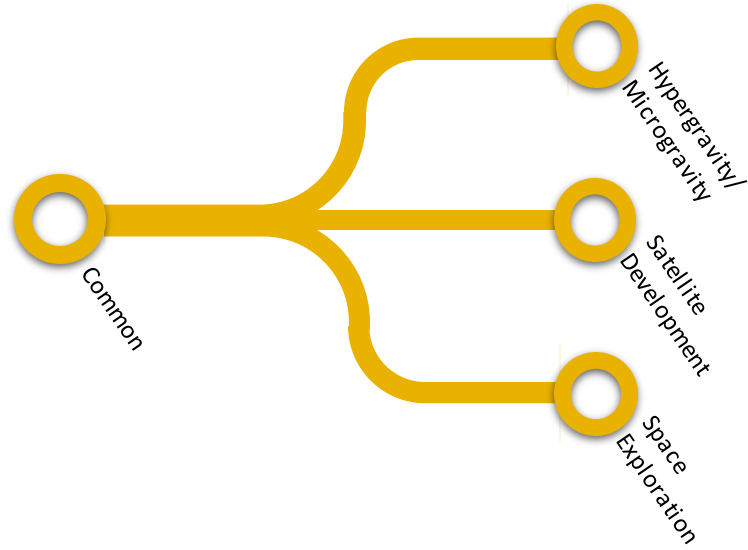
Access to Space for All Initiative



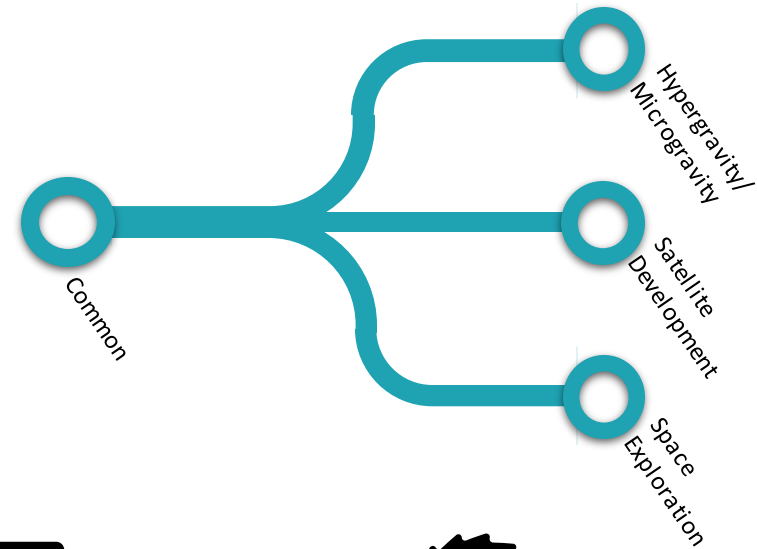


Access to Space for All Initiative

TOOL COMPONENT



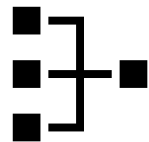
EDUCATION COMPONENT



Fellowship is OPEN!
 Post-graduate study on Nano Satellite Technology (PNST)
 : 10 Jan 2022



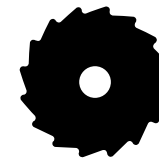
Design



Planning



Webinars



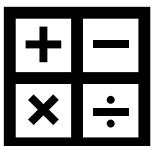
Workshops /Training



MOOCs



Teacher's Guides



Calculation/
Analyzation



Validation /Testing



Curriculum



Fellowships



What is KiboCUBE?

- A cooperation programme between United Nations Office for Outer Space Affairs (UNOOSA) and Japan Aerospace Exploration Agency (JAXA) which started from 2015, implemented under the Access to Space for All Initiative.
- Aims to provide educational or research institutions from developing countries with opportunities to deploy cube satellites (CubeSats) which they develop and manufacture from the International Space Station (ISS) Japanese Experiment Module (Kibo)

Photo credit: JAXA



Why KiboCUBE?

- CubeSats offer a large variety of applications and developing a CubeSat can be the first step for a country in acquisitions of the skills and know-how needed to develop a space programme
- CubeSats are affordable to develop and represents an achievable entry point to space activities; in KiboCUBE **JAXA will bear the cost of the launch of the CubeSat to the ISS and deployment from Kibo**
- Lower vibration and more friendly environment during launch
- Administrative support from UNOOSA and technical support from JAXA during the development



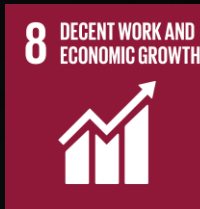
KiboCUBE for Sustainable Development Goals (SDGs)

KiboCUBE may contribute to the SDGs below by fostering innovation and supporting education and training on skillsets for developing cutting-edge technology.

SDG 4 “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all”;

SDG 8 “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all”






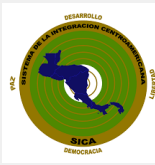
SDG 9 “Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation”





KiboCUBE



	Winner		Objective	Deployed	Launched	Selected
1 st round	KENYA: University of Nairobi "1KUNS-PF"		To monitor agriculture and coastal areas	11.05.2018	04.2018	08.2016
2 nd round	GUATEMALA: Universidad de Valle De Guatemala "Quetzal-1"		To acquire remote sensing data for natural resource management	29.4.2020	03.2020	09.2017
3 rd round	MAURITIUS: Mauritius Research Council "MIR-SAT 1"		To collect thermal infrared images and to test onboard communication	22.6.2021	05.2020	06.2018
3 rd round	INDONESIA: Surya University "SS-1"		To demonstrate remote communication	Currently under development		09.2018
4 th round	MOLDOVA: Technical University of Moldova "TUMnanoSAT"		To demonstrate technology and test various components	Currently under development		06.2019
5 th round	SISTEMA DE LA INTEGRACIÓN CENTROAMERICANA "MORAZAN-SAT"		To monitor weather variables in remote areas providing early warning during extreme weather events	Currently under development		12. 2020



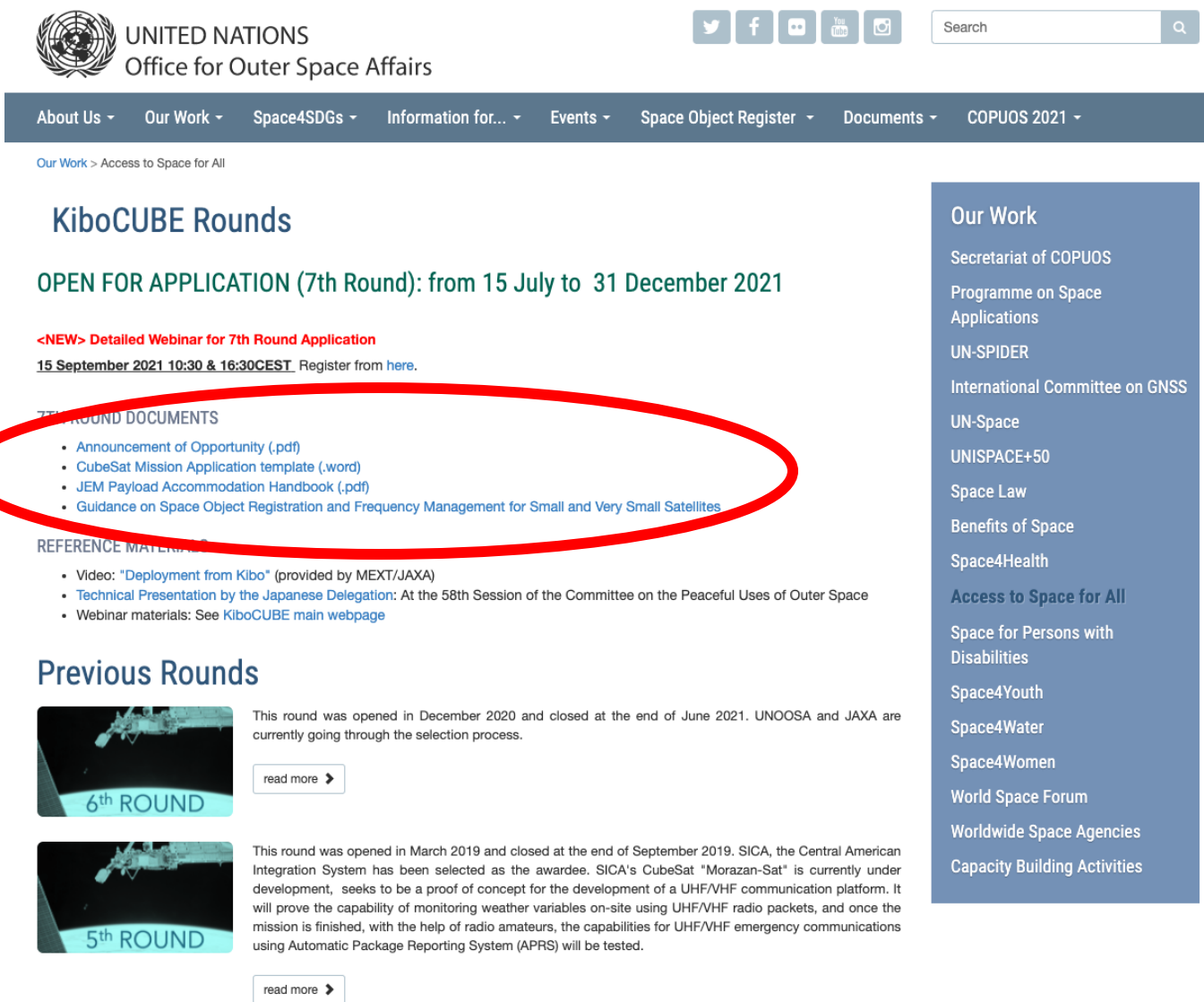
How to apply to the 7th Round

Find the documents at

https://www.unoosa.org/oosa/en/ourwork/access2space4all/KiboCUBE/KiboCUBE_Rounds.html

! PLEASE READ!!!!!!

- Announcement of Opportunity
- CubeSat Mission Application Template
- JEM Payload Accommodation Handbook
- Guidance on Space Object Registration and Frequency Management for Small and Very Small Satellites



The screenshot shows the official website for the KiboCUBE Rounds. At the top, there is a navigation bar with links for 'About Us', 'Our Work', 'Space4SDGs', 'Information for...', 'Events', 'Space Object Register', 'Documents', and 'COPUOS 2021'. Below this, the main heading reads 'KiboCUBE Rounds' followed by 'OPEN FOR APPLICATION (7th Round): from 15 July to 31 December 2021'. A red circle highlights the '7th ROUND DOCUMENTS' section, which contains a list of links: 'Announcement of Opportunity (.pdf)', 'CubeSat Mission Application template (.word)', 'JEM Payload Accommodation Handbook (.pdf)', and 'Guidance on Space Object Registration and Frequency Management for Small and Very Small Satellites'. Below this is a 'REFERENCE MATERIALS' section with links to a video, a technical presentation, and webinar materials. The 'Previous Rounds' section features two cards for the 6th and 5th rounds, each with a 'read more' button. On the right side of the page, there is a vertical menu titled 'Our Work' with various sub-links like 'Secretariat of COPUOS', 'Programme on Space Applications', 'UN-SPIDER', etc.



How to apply to the 7th Round

CHECK OUT WEBINARS!!!!!!!

- 1) KiboCUBE Academy (Season 1): 4 webinars that dive into theoretical, technical knowledge about how to develop, operate and utilize a satellite.

In collaboration with UNISEC Global (Japanese universities)

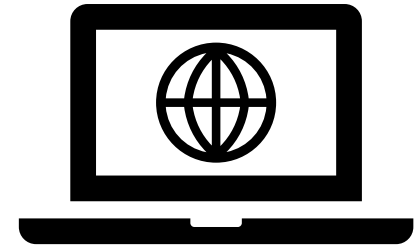
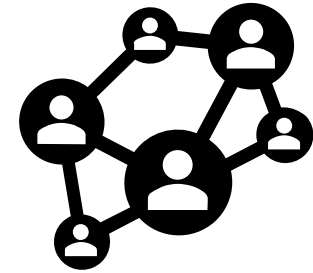
<https://www.unoosa.org/oosa/en/ourwork/psa/hsti/kibocube.html>

- 2) Tips for Access to Space for All Application: Various webinars that can help you such as communication/awareness raising of your project, space law/regulations, and innovative technology such as Artificial Intelligence

https://www.unoosa.org/oosa/en/ourwork/access2space4all/accspace4all_tips.html

- 3) World Space Week 2020: "Enabling more countries to access space through the KiboCUBE opportunity": Learn about the experiences from the past winners

<https://www.unoosa.org/oosa/en/ourwork/psa/hsti/kibocube.html>





How to apply to the 7th Round

4) KiboCUBE Academy (Season 2)

- On Demand Lectures <Starting late October 2021 TBD>
Series of 21 lectures (1 hour per lecture)
- Live Lectures <November 2021 TBD>

Lectures provided by university professors from UNISEC Global

#	Title	Contents of Lectures
1	CubeSat Technologies	1-1. CubeSat Technologies 1-2. System Integration of CubeSats 1-3. Q&A
2	Launch and Operation of CubeSats and Related Regulations	2-1-1. Launch and operation of CubeSats 2-1-2. CubeSat Related Regulations 2-2. CubeSat Operation 2-3. Q&A
3	Introduction of CubeSat Projects and Online Tour of Environmental Test Facility	3-1. Introduction of CubeSat Projects "BIRDS" 3-2. Online Tour of CubeSat Environmental Test Facility 3-3. Q&A

- Technical Consultation <Nov-Dec 2021 TBD>
One to one consultation with applying teams and UNOOSA/JAXA/UNISEC

No.	Contents
1	Introduction to Small satellite mission and Utilization
2	CubeSat for Capacity Building
3	Introduction to CubeSat Project Management
4	System Engineering for CubeSat
5	Introduction of J-SSOD and Safety Review process
6	CubeSat design for safety requirements
7	Introduction to CubeSat technologies
8	Subsystem Lecture for CubeSat (Power control system)
9	Subsystem Lecture for CubeSat (Communication system)
10	Subsystem Lecture for CubeSat (Command and Data Handling system)
11	Subsystem Lecture for CubeSat (Structure system)
12	Subsystem Lecture for CubeSat (Mechanism system)
13	Subsystem Lecture for CubeSat (Thermal control system)
14	Subsystem Lecture for CubeSat (Attitude Control System)
15	Introduction to CubeSat Environmental Testing
16	Orbit Dynamics of CubeSat
17	Introduction Operation technics and ground system
18	Introduction Payload for CubeSat
19	Satellite operation and Related Regulations (ITU etc.)
20	Space debris problem and Countermeasures
21	Lessons & Learned for CubeSat mission



Announcement of Opportunity: Deadline & Opportunity

Announcement of Opportunity

14 July 2021

- 1. Thematic Area:** Basic and Human Space Technologies
- 2. Title:** United Nations/Japan Cooperation Programme on CubeSat Deployment from the International Space Station (ISS) Japanese Experiment Module (Kibo) or “KiboCUBE”
- 3. Implementing Organizations:** United Nations Office for Outer Space Affairs (OOSA) and Japan Aerospace Exploration Agency (JAXA)
- 4. Deadline for Applications:** Fully completed application forms must be submitted to the United Nations Office for Outer Space Affairs 31 December 2021. Applicants will be notified of the outcome of their application by middle of February 2022.
- 5. Number of Opportunities for Deploying CubeSat:** For each AO, maximum of two entities/ One Unit (1U) CubeSat per entity will be selected depending on the number and content of applications and J-SSOD utilization plan.
- 6. Language of the Programme:** English



Announcement of Opportunity: Programme Schedule

9. Programme Schedule and Milestone

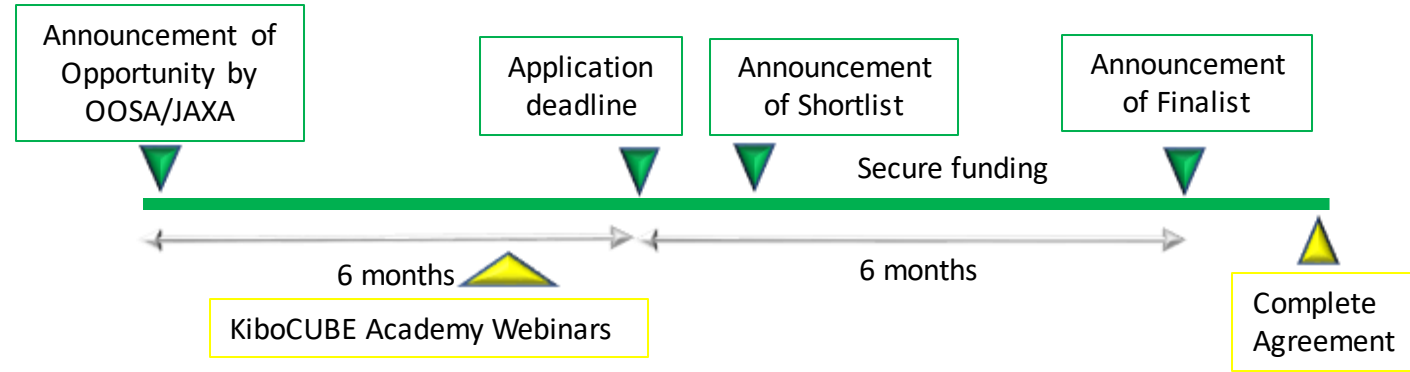
(A) Programme Schedule

Application Submission	31 December 2021
Selection and notification of shortlisted applicants	Middle of February 2022
Updated application submission	31 May 2022
Selection and notification of winner(s)	1 July 2022
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 2024, subject to the ISS operational requirements and progress of the CubeSat development.
Reporting	<ul style="list-style-type: none"> - A semi-annual report on the CubeSat mission, related activities and on any publications regarding the participation of this Programme by the Selected Entity must be submitted to OOSA and JAXA - A first briefing 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 to OOSA and JAXA within 3 months following the re-entry of the CubeSat mission.

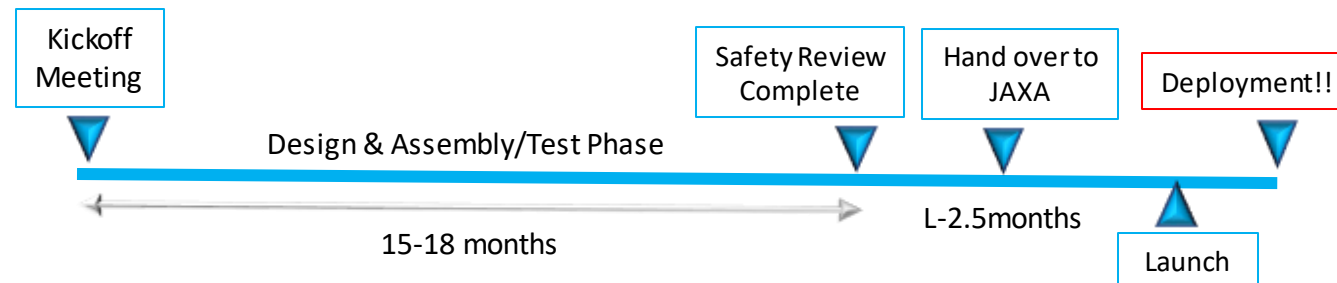
It must be noted that;

- 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 3.5 months to submit a detailed explanation on how the budget will be acquired.
- UNOOSA and JAXA may ask for further information on the applications submitted in writing or other means. The applicants must cooperate with UNOOSA and JAXA on this matter.
- The number of opportunities and the launch and deployment schedule may change due to constraints on the ISS operation or for any other reasons.
- The handover of the CubeSat to JAXA must be completed by the end of 2023, due to the ISS operational requirements. If the development of the CubeSat does not meet the Programme Schedule within this timeframe, JAXA may terminate the provision of the deployment.

Selection Schedule (around 12months)



Development Schedule (around 18months)





Announcement of Opportunity: Eligibility

10. Requirements for Participation

(A) Eligibility Criteria

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

- Heads of research institutes, universities, and other public organizations are eligible to apply for this Opportunity. Private companies, non-governmental or non-profitable agencies are ineligible.
- Entities located in countries which 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.

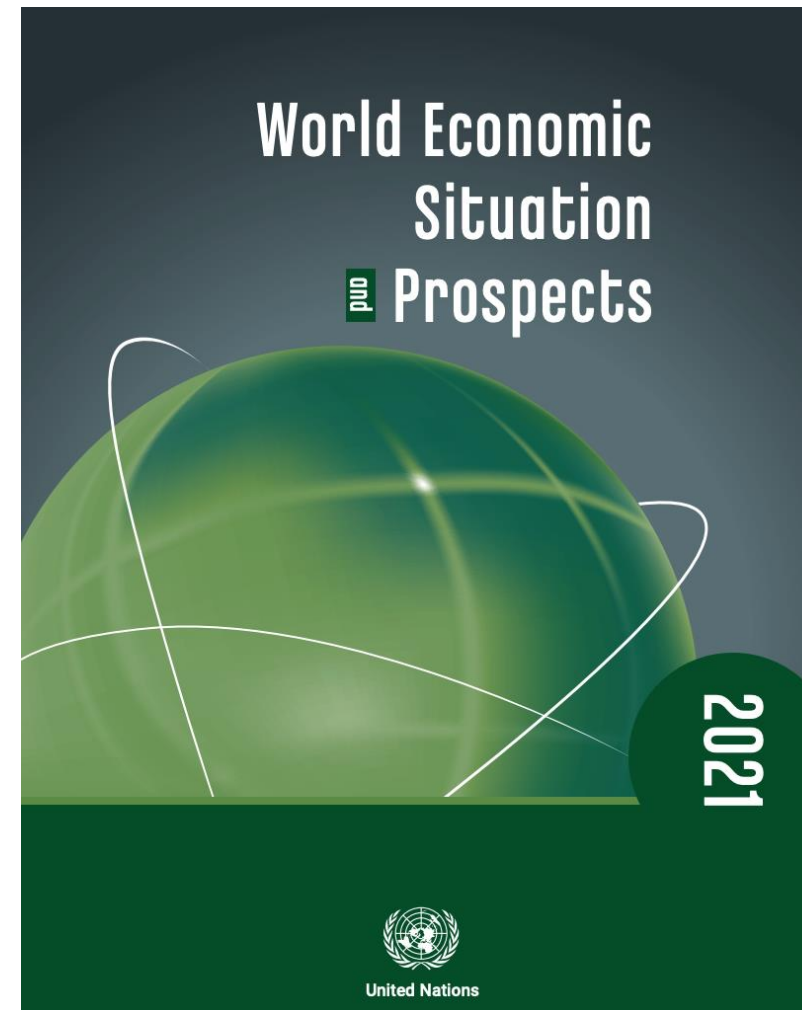
To assess eligibility, OOSA and JAXA will use the country classification list of developing economies and economies in transition indicated in the joint report, *World Economic and Situation Prospects* published by United Nations Department of Economic and Social Affairs and other related organizations:

https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/WESP2021_FullReport.pdf

Entities applying for this Opportunity are responsible for the development of their CubeSat including the design, manufacturing, test 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 have sufficient capability in the following areas, as demonstrated in their application materials upon submission:

- CubeSat design, manufacture, testing and operation
- Ability to transport the CubeSat to JAXA (planning, budget, export/import control etc.)
- Preparation of safety review (submission of safety assessment reports etc.)
- Ability to coordinate the radio frequency of the CubeSat internationally and obtain a license of radio stations for CubeSat in the country
- Ability to develop the ground station facility with radio frequency license
- Ability to register the CubeSat to the Register of Objects Launched into Outer Space
- Letter of endorsement from the head of the entity

A diverse and balanced participation of different genders in teams as well as supervising positions is encouraged. Participation of persons with disabilities in the teams are also encouraged.



https://www.un.org/development/desa/dpad/wp-content/uploads/sites/45/WESP2021_FullReport.pdf



Announcement of Opportunity: Selection

(B) Selection Criteria

The Selection Board consists of members nominated by OOSA and JAXA and will review the incoming applications according to the following criteria:

- Completeness of application form;
- Scientific and technical value of the CubeSat to be deployed under this Opportunity, as determined by either:
 - (a) The CubeSat'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'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 (with respect to previous developments in applying institutions, if any)
- Capability of meeting or exceeding the minimum technical requirements as outlined by OOSA and JAXA;
- Compliance with the Programme Schedule, including the deployment schedule;
- Communication and dissemination plan
- In case of proposals with the same score, the gender composition in the teams will be compared and the proposal with a relatively more diverse and balanced gender composition will rank higher.)
- 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 in the Sustainable Development Goals
- Compliance with the [Space Debris Mitigation Guidelines](#) and [Guidelines for the Long-term Sustainability of Outer Space Activities](#)



Announcement of Opportunity: Roles and Responsibilities

11. Roles and Responsibilities

The Selected Entity will conduct the following activities:

- Submit the overall schedule/timeline for the CubeSat development and its mission to JAXA.
- Design, analyze, manufacture and test the CubeSat and its supporting systems including verification of the compatibility with the technical requirements, except for the tests that will be conducted by JAXA as specified in Section 12.
- Conduct all radio frequency related matters in full compliance with the applicable International Telecommunication Union radio regulations.
- Implement the safety assessment to verify the compliance with JAXA technical requirements and prepare the materials and operations required for the review.
- Attend the technical coordination meeting which is to be arranged by JAXA.
- Deliver the CubeSat to the location specified by JAXA (expected to be Tsukuba Space Center) for the compliance tests (Fit-check and outgassing test can be conducted by JAXA.) and conduct a visual inspection, uninstall non-flight items for the compatibility tests and the handover.
- Operate the CubeSat including tracking control and data acquisition after the deployment from Kibo.
- Register the space object (the CubeSat). For more information, please refer to the [Guidance on Space Object Registration and Frequency Management for Small and Very Small Satellites](#).
- Cooperate with the public relations and promotion activities of OOSA and JAXA including responding to press inquiries about the CubeSat and preparing information materials upon request from OOSA and JAXA.

Please note that any cost associated with the activities above, including employment costs, travel expenses and transportation fees shall be borne by the Selected Entity.



Announcement of Opportunity: Submission

13. Application Submission

The fully completed application documents of the letter of endorsement from the head of the entity (Document 1) and CubeSat Mission Application (Document 2) must be submitted to OOSA by 31 December 2021 by email to the following address:

unoosa-access-to-space@un.org

In the email, applying entities are requested to attach scanned copies of the Document 1 and the cover page of Document 2 as pdf-file (.pdf) and the entire document of the Document 2 in 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 (Document 1 and Document 2) is mandatory.

After receipt, OOSA and JAXA will proceed to evaluate each application. At OOSA's or JAXA's sole discretion, additional information may be requested from applicants, if necessary, to assist in the evaluation of the application. The Selected Entity will then be notified with the results of the selection process. All awards are final, are made at the sole discretion of OOSA and JAXA, and not subject to challenge or review.

Thank you!

For inquires:

UNOOSA Access to Space

unoosa-access-to-space@un.org

