Introduction of KiboCUBE

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What is Kibo?

Japanese Experiment Module “Kibo”
(meaning “hope” in Japanese)
Japanese Experiment Module
“Kibo”

- Robotic arm
- Stowage
- Airlock
- Pressurized module
- External Platform
KiboCUBE is a Program based on the United Nations/Japan collaboration on 1U CubeSat Deployment from the International Space Station (ISS) Japanese Experiment Module “Kibo”.

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

KiboCUBE in partnership with Japan Aerospace Exploration Agency provides the opportunity to develop a cube satellite (CubeSat) and have it deployed from the International Space Station Japanese module “Kibo”.

KiboCUBE enables access to space promoting the sustainability of future space activities.
Design and develop a 1U size CubeSat. Go through safety reviews and testing.

Bring it to JAXA.

CubeSat deployment mission using J-SSOD

1. The satellite install case which installs CubeSats is stowed in a soft-cushion bag for shipping. The satellite install case is launched by a cargo transfer vehicle to ISS.

2. The satellite install case is installed on the MPEP by the crew member in Japanese Experiment Module "Kibo", and then transferred from the airlock to the outside.

3. The robotic arm of "Kibo" holds the MPEP to transfer it to the release point. The satellites are deployed by a command signal sent from ground.
<table>
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<th>Round</th>
<th>Awardee</th>
<th>Mission and Status</th>
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<tr>
<td>1</td>
<td>Republic of <em>Kenya</em>: “1KUNS-PF” University of Nairobi</td>
<td>To monitor agriculture and coastal areas Deployed 11&lt;sup&gt;th&lt;/sup&gt; May. 2018</td>
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<td>2</td>
<td>Republic of <em>Guatemala</em>: ”Quetzal-1” Universidad de Valle De Guatemala</td>
<td>To acquire remote sensing data for natural resource management Deployed 29&lt;sup&gt;th&lt;/sup&gt; April 2020</td>
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<td>3</td>
<td>Republic of <em>Mauritius</em>: “MIR-SAT 1” Mauritius Research and Innovation Council</td>
<td>To collect images and to test onboard communication Deployed 22&lt;sup&gt;nd&lt;/sup&gt; June 2021</td>
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<td>3</td>
<td>Republic of <em>Indonesia</em>: “SS-1” Surya University</td>
<td>To demonstrate remote communication Deployed 6&lt;sup&gt;th&lt;/sup&gt; January 2023</td>
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<td>4</td>
<td>Republic of <em>Moldova</em>: ”TUMnanoSAT” Technical University of Moldova</td>
<td>To demonstrate technology and test various components Deployed 12&lt;sup&gt;th&lt;/sup&gt; August 2022</td>
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<tr>
<td>5</td>
<td>Sistema de la Integracion Centroamericana: SICA ”MORAZAN-SAT”</td>
<td>To monitor weather variables in remote areas providing early warning during extreme weather events In development</td>
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<td>6</td>
<td>United <em>Mexican States</em>: ” Gxiba-1” The Universidad Popular Autónoma del Estado de Puebla</td>
<td>To observe active volcanoes in Mexico and analyze the ash dispersion In development</td>
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<td>6</td>
<td>Republic of <em>Tunisia</em>: ” TUNSAT-1” Ecole Supérieure Privée d’Ingénierie et de Technologie Appliquée</td>
<td>To validate of the technology which is the focus on the reliability of 1U CubeSat In development</td>
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Since 2012, 72 CubeSats from 31 countries were deployed using J-SSOD. (KiboCUBE awardees)

Countries which deployed satellites using J-SSOD (excluding Japan).

2012: USA, Vietnam
2013: USA, Vietnam
2014, 2015: Brazil
2016: Singapore, Philippines, Italy
2017: Bangladesh, Ghana, Mongolia, Nigeria
2018: Bhutan, Costa Rica, Kenya, Philippines, Malaysia, Singapore, Turkey

2019: Nepal, Rwanda, Sri Lanka, Egypt, Singapore
2020: Philippines, Guatemala, Paraguay, Myanmar, Israel
2021: Mauritius, UAE, Australia, Philippines
2022: Moldova, Zimbabwe, Uganda
2023: Indonesia
Advantages of KiboCUBE

1. Free of charge
2. Get technical support from experts (UNISEC, JAXA, Service provider)
3. Launch opportunities 3-4 times a year (even if you miss a certain flight, you don’t have to wait for a long time for the next chance)
4. Low vibration during launch compared to rocket rides
5. You can see the deployment at real-time!
In support of KiboCUBE, JAXA has developed a series of free lectures in English by experts of space engineering in collaboration with UNISEC (University Space Engineering Consortium).
The free lectures are posted here!

Live sessions are also held a few times a year.

https://www.unoosa.org/oosa/en/ourwork/access2space4all/SatDevTrack_Webinars.html#Tag1
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JAXA and UNOOSA have extended the KiboCUBE program until 2030 and the 8th round has just been opened!