

- KiboCUBE - UNOOSA-JAXA Cooperation Programme on Deployment of CubeSat from the ISS “Kibo”

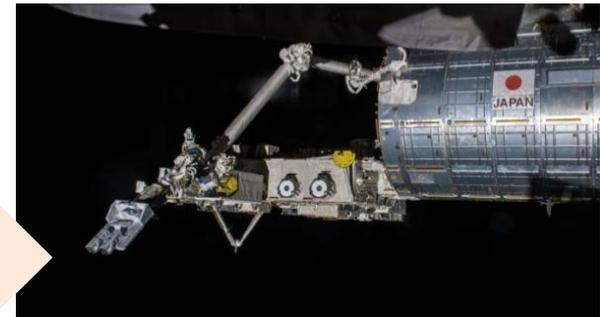
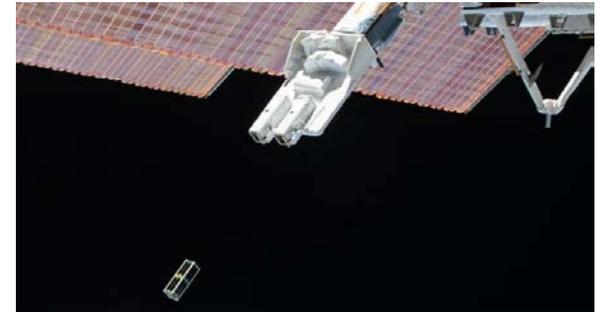


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“KiboCUBE”

– CubeSat Deployment from ISS Kibo –



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Committee on the Peaceful Uses of Outer Space, 59th session
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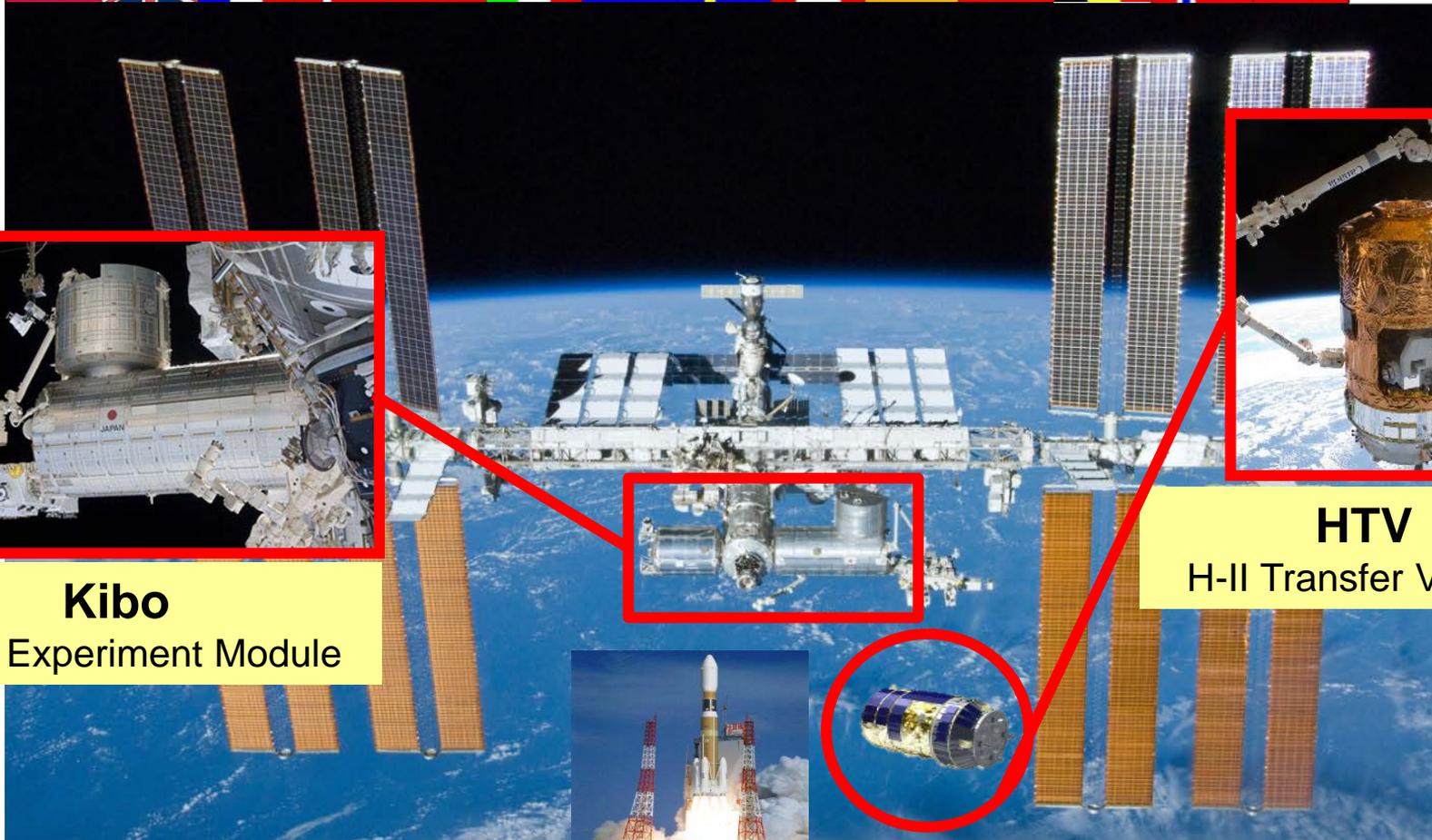
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ISS: Japan's Capabilities and Contributions

ISS

The International Space Station



Kibo

Japan Experiment Module



HTV

H-II Transfer Vehicle



H-IIB



“Kibo” is Unique! – Exposed Facility

Standard-class EF
Mission:SEDA-AP (JAXA)

ExHAM:
Material Exposure Mission

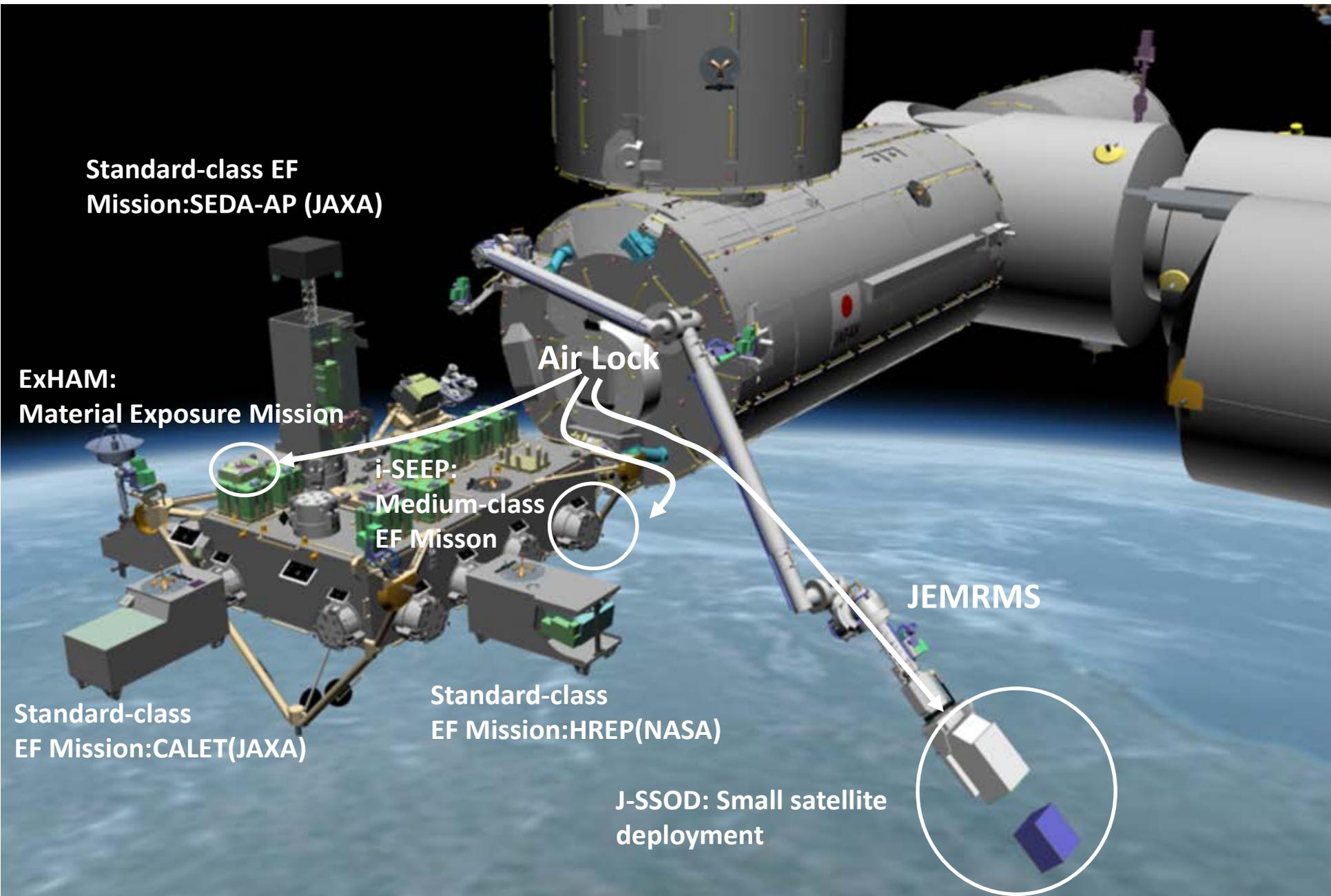
i-SEEP:
Medium-class
EF Misson

Standard-class
EF Mission:HREP(NASA)

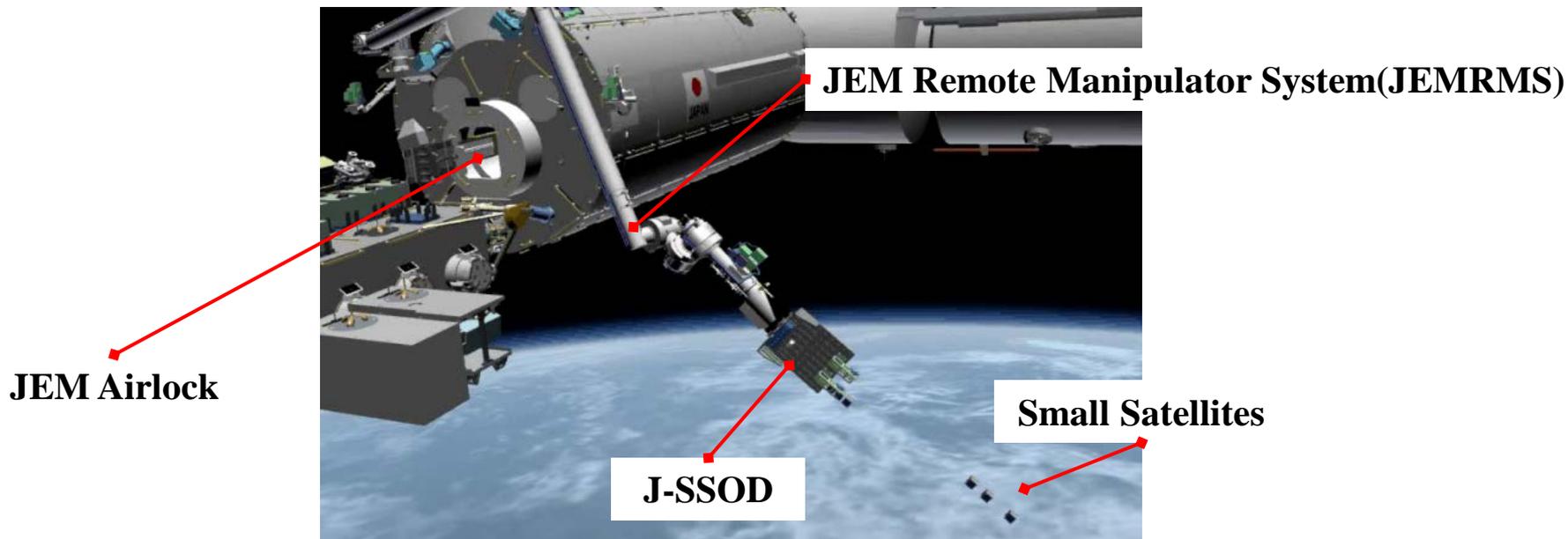
J-SSOD: Small satellite
deployment

Air Lock

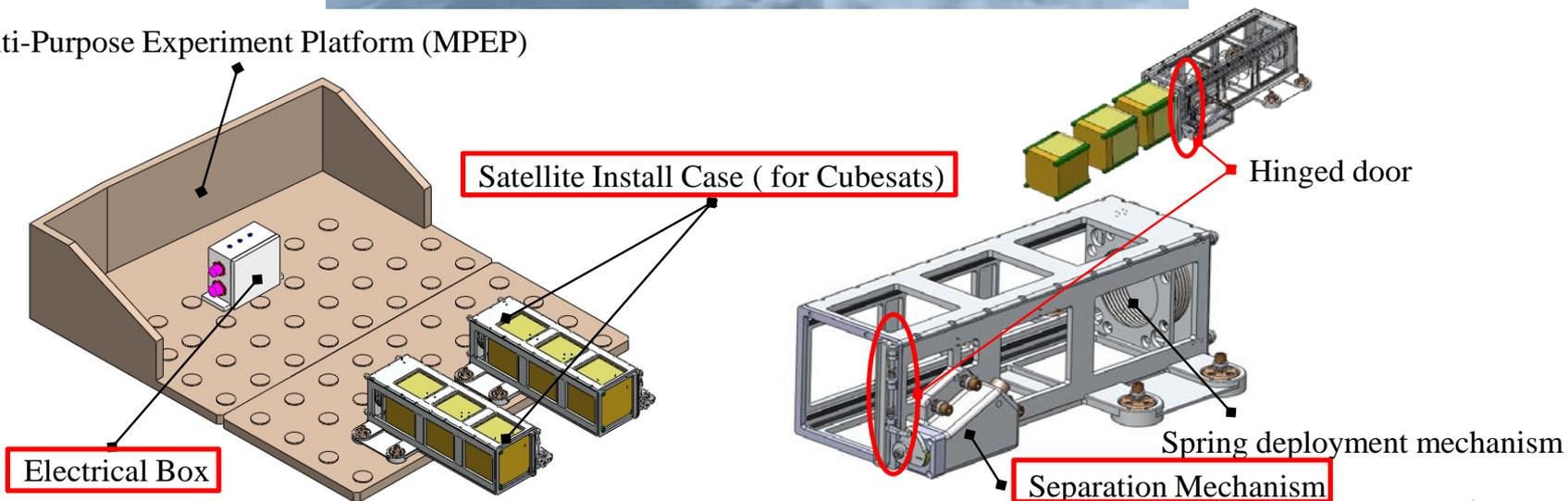
JEMRMS



J-SSOD: JEM Small Satellite Orbital Deployer

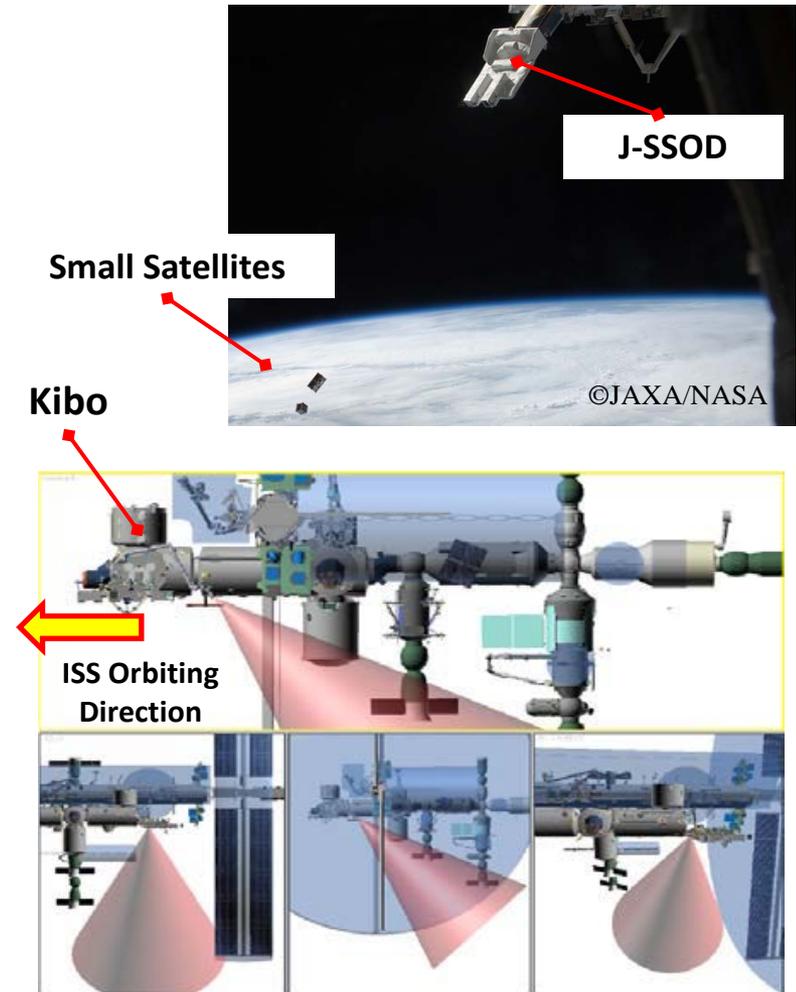


Multi-Purpose Experiment Platform (MPEP)



J-SSOD: JEM Small Satellite Orbital Deployer

Item	Specification
Satellite Size	CubeSat : 1U, 2U, or 3U (*1) 50 kg class satellite: 55×35×55 cm
Satellite mass	CubeSat : 1.33 kg or less per 1U 50 kg class satellite: 50kg or less
Orbital altitude	approximately 380 - 420 km (*2)
Inclination	51.6°
Deployment direction	Nadir-aft 45° from the ISS nadir side
Deployment velocity	CubeSat : 1.1 - 1.7 m/sec 50 kg Microsat : 0.4 m/sec
Ballistic coefficient	100kg/m ² or less (*3)



Deployment Direction(Cone)
Nadir-aft 45° from the ISS nadir side

*1) CubeSat specification:

10 cm (W) × 10 cm (D) Height: 1U: 10 cm, 2U: 20 cm, 3U: 30 cm

*2) Depends on ISS altitude.

*3) Depends on ballistic coefficient, altitude at release, solar activity, etc.



J-SSOD: Opportunities for Increased Capacity

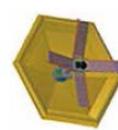
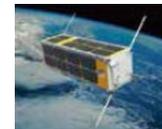
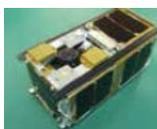
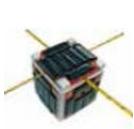
As of
Today

- 139 satellites from Kibo

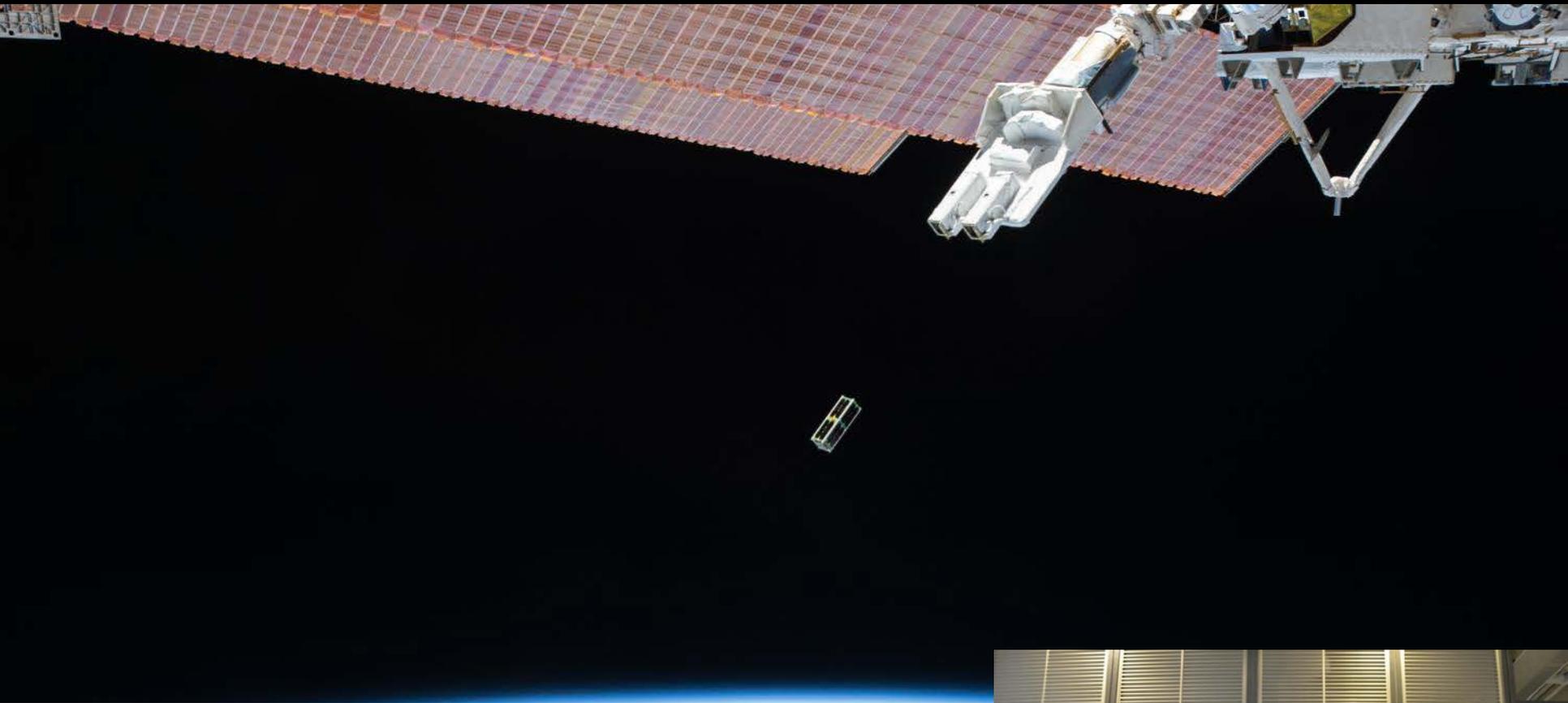
**Come
Join Us!**

How?

- Moderate expenses
- Collaborate with Japanese universities or private enterprises.
- (CubeSat (1U-3U) and Microsat (50 kg))



CubeSat Deployment Mission Overview



SERPENS Launch and Deploy:2015

Investigator:

University of Brasilia (**Brazil**)

Agência Espacial Brasileira(AEB)

Japan Manned Space Systems Corporation

Size:3U



50kg Microsat Deployment Mission Overview



JAXA's First Mission for 50kg Microsat

Diwata-1 Launch and Deploy:2016

Investigator:

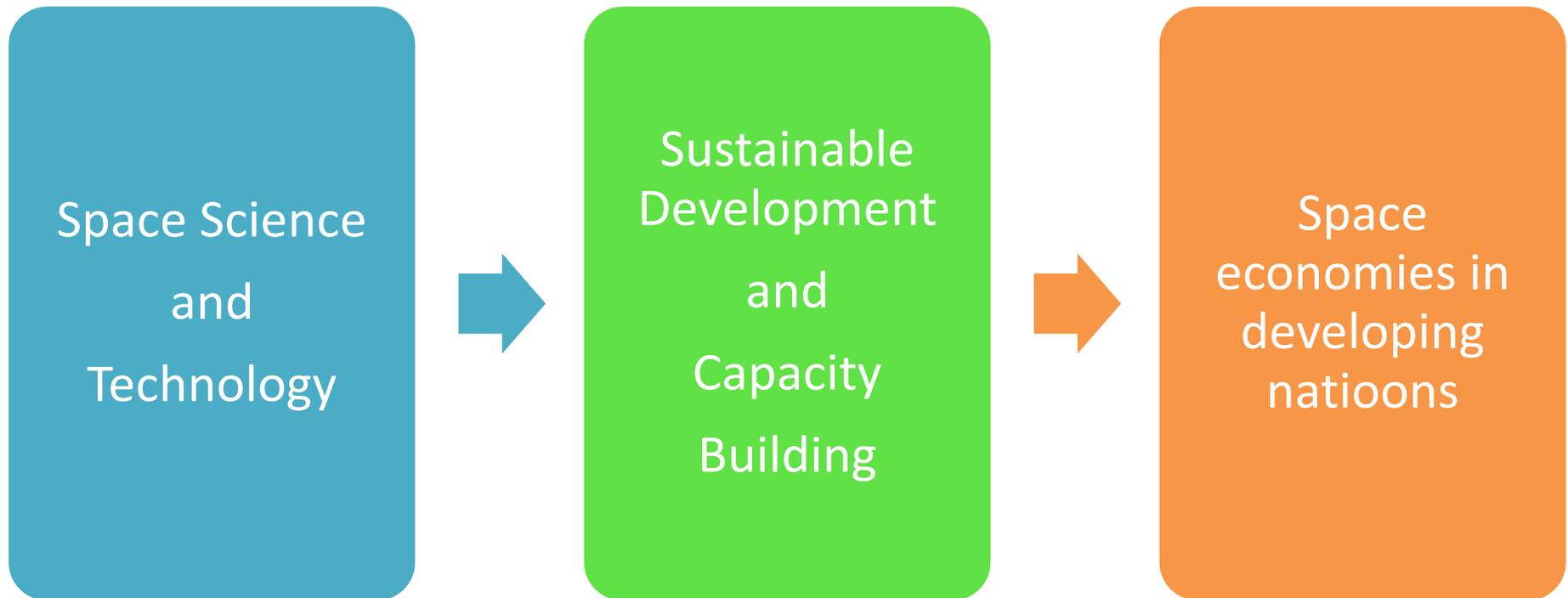
University of the Philippines (**Philippine**)
Department of Science and Technology (DOST)
Tohoku University/Hokkaido University

Size: Micro-Satellite (55cm × 35cm × 55cm)



Why “KiboCUBE”?

- ◆ UNOOSA and JAXA are raising awareness of the role that space science and technology plays in promoting sustainable development and contributing to building national capacities in spacecraft engineering, design and construction.
(CubeSat (1U)/ once a year from 2017-2019)



Eligibility Criteria of “KiboCUBE”

The entity shall be...

Located in developing countries

Located in a country without the means to transport artificial satellites into space and place them in orbit

A head of research institutes, universities, or other public organizations

Responsible for the development, operation and utilization of their CubeSat



Selection Milestone for KiboCUBE

- ◆ UNOOSA/JAXA have completed our public offering of this opportunity on March 31 and accepted 13 proposals.

Selection Milestone

Selection of Successful Applicant

Several entities will be selected as “short listed entities” and notified before 1 July 2016.

One entity will be selected among the short-listed entities and notified by 1 August 2016

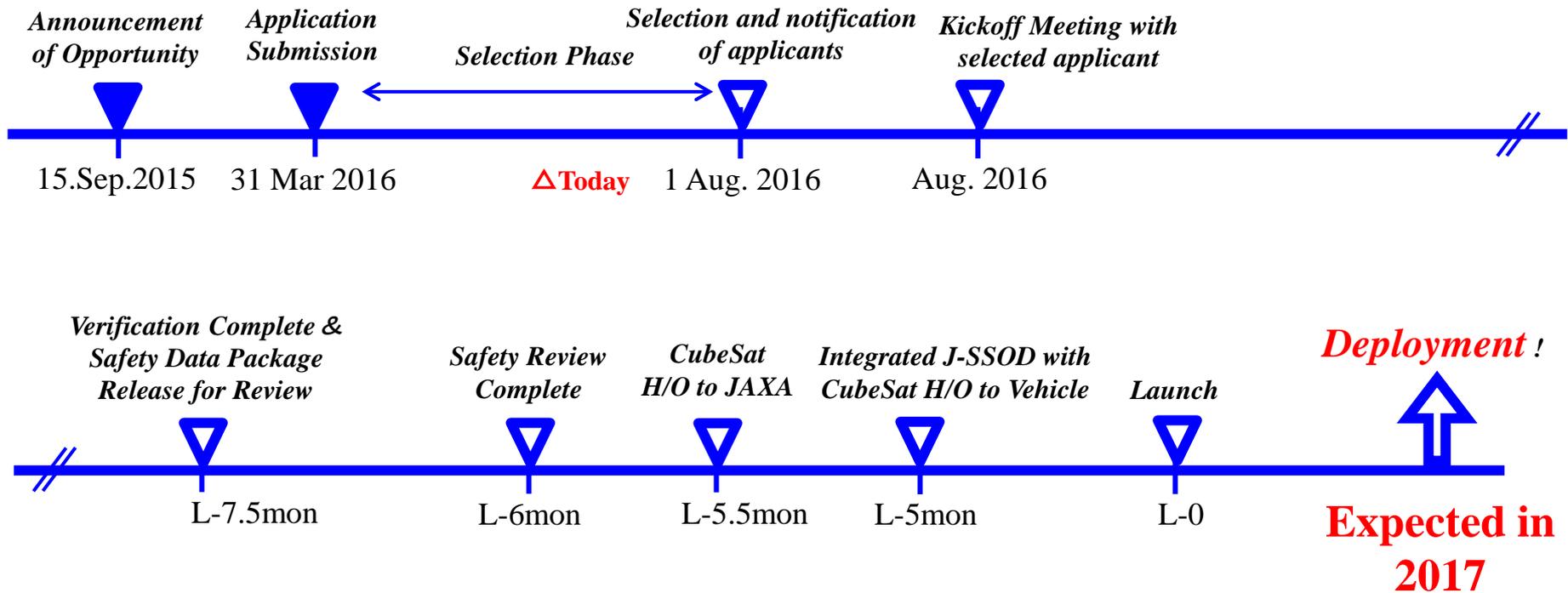
Signing of an arrangement (contract) and Technical coordination

Signing of a non-disclosure agreement and a contract between JAXA and the Selected Entity.

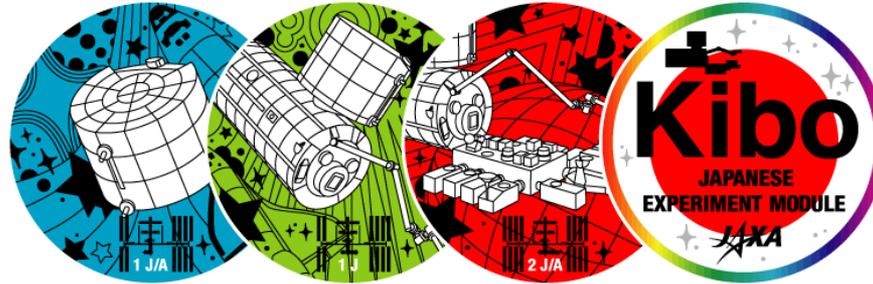
Technical coordination in preparation of the CubeSat deployment between JAXA and the Selected Entity.



Schedule of KiboCUBE for Deployment in 2017



Conclusion



Eager to support capacity building and technological development

2nd KiboCUBE is coming soon!

Looking forward to seeing more applicants!



A photograph of the International Space Station (ISS) in orbit above Earth. The station's large solar panel arrays are prominent, extending diagonally across the frame. The Earth's blue and white clouds are visible in the background. A small satellite or payload is seen floating in the distance.

Thank you for your attention

For further information, please contact
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JAXA Kibo utilization: kibocube@jaxa.jp