J-Cube Overview

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Introducing

J-CUBE

Your Future CubeSats

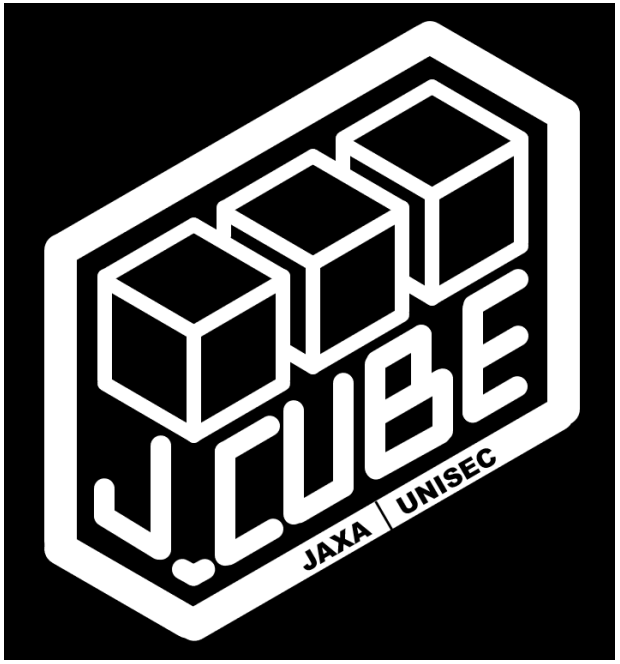
JAXA

UNISEC
University Space Engineering Consortium

A collaboration between JAXA and UNISEC to help emerging space nations get their ~~first~~ CubeSats deployed into Low-Earth Orbit via the ISS.

J-CUBE is not to be confused with KiboCUBE

JAXA+UNISEC,
low-cost opportunities



J-CUBE:

JAXA+UNOOSA,
zero-cost opportunities

KiboCUBE:

J-CUBE vs KiboCUBE

	J-CUBE	KiboCUBE
Launch price	Not free, but much lower than the market price	Free
Size	Up to 3U	1U
Selection	Application is reviewed by the selection committee	Very competitive
Requirement	**Team up with a Japanese university** **Capacity building purpose**	**Capacity building purpose**

Both will use ISS Kibo module

Typical flow

1. **Contact to UNISEC**
2. Introduction of a Japanese partner
3. First contact
4. Meeting (remote/in-person)
5. Many remote meetings and many exchange of e-mails
6. Statement of Work (SoW)
   - What to do in the collaboration
   - Responsibilities of each party
7. Contract signed
8. Money transfer
   - Usually from foreign partners to Japanese universities
9. Actual works
   - Students may come to Japan as full-time graduate students or research visiting students
10. Satellite launch and operation
11. Discussion on the next collaborative project

If no money transfer is involved, MOU is OK

What Japanese universities want

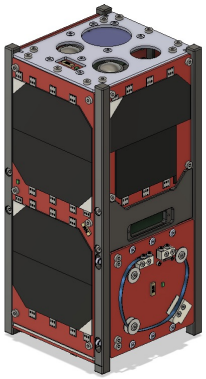
- Universities are not launch brokers
  - Not doing for money
  - Expect return in other ways
    - Students, papers, etc.
- Leverage the international collaboration to promote globalization of university research/education and campus
- Japanese university may simply want to lower the launch cost by sharing with the foreign partners
- Anyway, note that you are not dealing with launch brokers

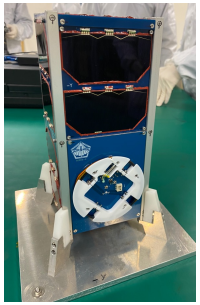
Things to be noted

- As the money transfer occurs in J-CUBE, the contract between the foreign entity and the Japanese university is necessary
- The contract is legally-binding. Need assistance from the legal section of your organization
- The points in the contract
  - Non-military use
  - UN registration
  - Export control
  - Payment due
  - Payment currency (it is in Yen!)

Suggested schemes

- Good collaboration scheme
  - Joint development of CubeSat
    - Student exchange through the project
    - Students (both Japanese and non-Japanese) learn how to work with people from different cultural background
- Other good schemes
  - Satellite is built outside Japan, but students come to Japan for study
    - Learn satellite development/testing/operation via hands-on
    - Serve as a liaison with the home country
  - Satellite is built in Japan by students coming from abroad
    - Learn satellite development/testing/operation via hands-on





Student exchange make the collaboration better and more fruitful

J-Cube satellites

Maya-5 & Maya-6 (Philippine)

Students working in Japan for final integration

Deployed from ISS on July 19, 2023 and worked!

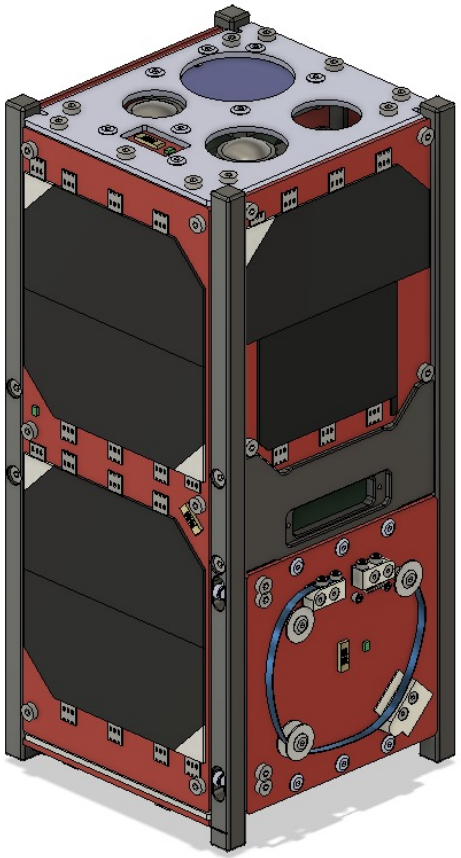
https://asti.dost.gov.ph/resources/media-release/maya-5-and-maya-6-cubesats-launched-to-international-space-station/

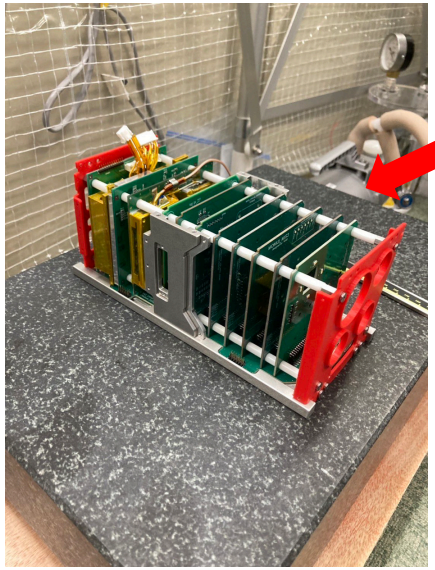
J-Cube satellites

KNACKSAT-II (Thailand)

Ready for flight

J-Cube satellites





Bhutan will provide one of mission payloads

Bhutanese student working on PCB at ChibaTech

MOMIJI (Bhutan) in collaboration with Chiba Institute of Technology (ChibaTech)

A case without any money transfer

CubeSat launch methods

Method	Price	Note
KiboCube	Free	Competitive
Government free piggyback (e.g. Vega, Epsilon, ELaNa, etc.)	Free	Competitive Not accessible from other countries
Other free launch (e.g. Avio)	Free	Competitive
Commercial rocket (e.g. Falcon-9, Electron, etc.)	~100KUSD for 1U	
Commercial ISS (e.g. Space BD, MBA, NanoRack)	~60KUSD for 1U	
J-Cube	1/3 ~ 1/5 of others	

The more cost advantage for a bigger size, e.g. 3U

Pros and Cons of ISS deployment

- Pros
  - 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
- Cons
  - Low altitude limiting the orbit lifetime
  - More strict safety requirements
- In addition, J-Cube opens the door to international collaboration!

Application process

1. Find a Japanese partner
   – If you know nobody, ask UNISEC for matchmaking
2. Define the project details
3. Sign a contract or MoU
4. Submit a J-Cube application **through the Japanese partner**

The application deadline for this year is **December 12, 2025**

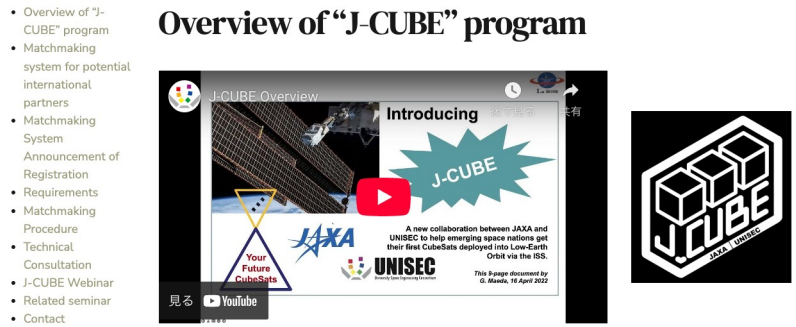
Note

The end of ISS operation is approaching. There will be the time limit for deployment. Capacity of the next year (2026) may be reduced. So, apply this year.

For consultation

Contact UNISEC
(Official Website)

For more very preliminary matters,
you can also contact CubeSat Salon



Conclusion

If you want a **low-cost** launch opportunity and **collaborate** with a Japanese university, think about J-Cube.

Google “J-Cube UNISEC”