



Working group summary report

Space Environment Utilization



SESSION CO-CHAIRS:

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SEU-WG recommendation at APRSAF23@Philippines

The following recommendations were made regarding SEUWG at APRSAF-23:

1. To further encourage Kibo utilization and to maximize the benefit of extended Japanese participation in the ISS operations until 2024.
2. To call for accelerated preparation for Kibo Exposed Facility utilization, given the social values and positive influences created by CubeSat deployment missions, and the benefit of material exposure experiments for satellite design.



Achievement

1. “The 3rd Space Environment and Kibo Utilization Workshop (SEKUW) ” was successfully held in Thailand in February 2017.
2. In January 2017, 6 CubeSats including **Singapore’s AOBA-VELOX-III** were successfully deployed from Kibo/J-SSOD.



SEKU Workshop (Host:GISTDA/NSTDA)



AOBA-VELOX-III



SEU-WG Participants

Country	participants	Institutes
Austria	1	UNOOSA
Bangladesh	1	Pabna Univ.
Bhutan	2	BICMA, Ministry of Information and Communication
India	12	ISRO, Kadi Sarva Vishwavidyalaya-KSV Univ., SPL, VIT Univ., VES College, Hindustan Aeronautics Limited
Indonesia	4	LAPAN, Surya University
Japan	10	JAXA, AES, JSF
Malaysia	1	ANGKASA
Nepal	1	Nepal Astronomical Society
Philippines	2	DOST
Singapore	2	SSTA
Taiwan	1	Gran Systems
Thailand	4	GISTDA, NSTDA, Learning Center for Earth Science and Astronomy
Turkey	3	ASELSAN, HUTGM
USA	1	NASA
Vietnam	3	STI, NRSD

Attended by 48 participants from 15 country/region, 28 organizations



Country Reports



- Many types of activities about Space Environment Utilization and future challenging plans are reported from Asian eight countries (India, Indonesia, Japan, Malaysia, The Philippines, Singapore, Thailand and Vietnam).
 - Space program of each country
 - Small satellite development and deployment through J-SSOD
 - Material exposure experiments for space technology
 - Ground experiments towards space experiments
 - Asian Try Zero-G (selection, preparation, awards ceremony)
 - Conferences, Workshops, and Space science festivals
 - Host session; Overview of SEU activities in India (ISRO, KSV)



Small Satellite Special Session (Joint with ST-WG)

- Attended by more than 124 participants
- Viewed various aspects of Small Sat projects
 - Launching Opportunities (J-SSOD, PSLV)
 - On-Going Projects (DIWATA, BIRDS, UBAKSAT)
 - Planning and Developing Projects (LesaSat, SpooQy-1, MYSat, SuryaSat)
 - Other Effort for Capacity Building
- Small Sat launching and deploying service is in high demand
- Small Sat projects are managed by educational institutions because it is a good opportunity for higher education

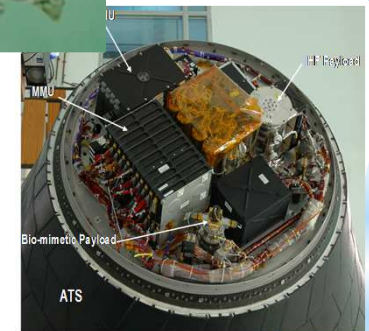


Projects of Space Environment Utilization

- Viewed material, life science and the other experiments after explanation of “Kibo” utilization opportunities by JAXA.
 - Material exposure experiments (Turkey, Malaysia)
 - Life science experiments (India)
 - Growth of quasicrystals, SRE-1 (India)
- Lastly following items were discussed.
 - UN cooperation activities on human space technology (UNOOSA)
 - Element for interior space environment (Bangladesh)
 - Business from space science research (all)

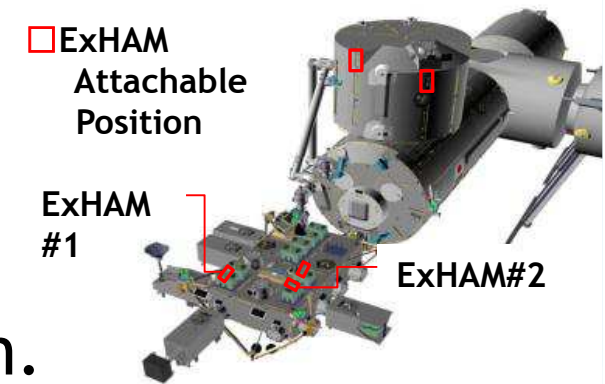


SRE-1



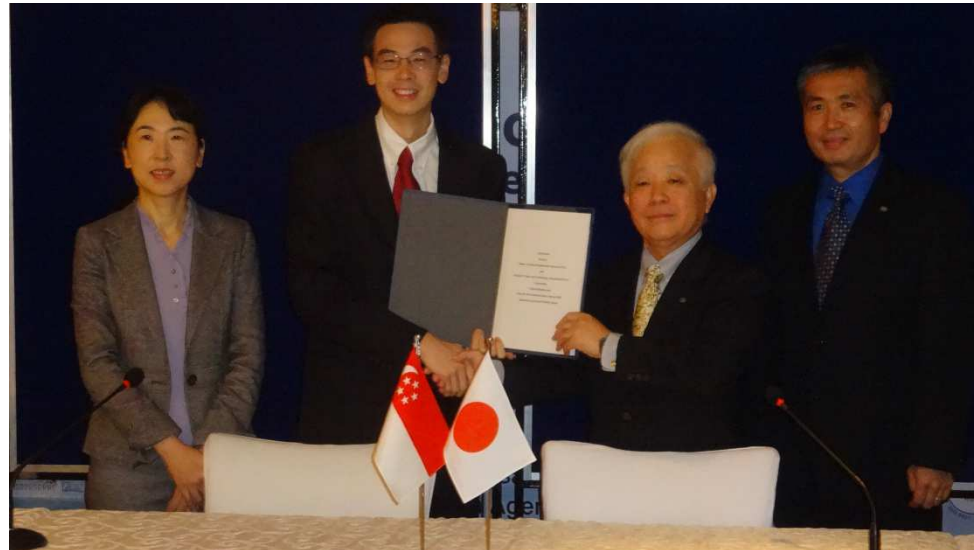
Summary and Next steps

1. J-SSOD CubeSat projects proposed by Indonesia, Malaysia, and Thailand are under consideration.
2. Malaysian **ExHAM** (material exposure experiment) project is in progress towards the contract between ANGKASA and JAXA. ExHAM in Singapore is also under consideration.
3. Some **experiments in Kibo pressurized module** are being discussed in Malaysia, Indonesia, and Thailand.
4. The international needs for Kibo utilization is increasing, as exemplified by the UN-JAXA collaborative mission for CubeSat deployment, named **KiboCUBE**.

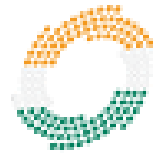


Summary and Next steps

- Acceleration of preparation and feasibility study in each country towards the realization of Kibo utilization is encouraged further.
- Singapore's CubeSat, SpooQy-1 is decided to be deployed in 2018(target) by using J-SSOD.



SSTA-JAXA contract of SpooQy-1 was signed at APRSAF-24.



24TH
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Thank you !