

Eighteenth Session of the Asia-Pacific Regional Space Agency Forum (APRSAP-18)

SEU (Space Environment Utilization) WG activities

Proposed Outline

1. The scope /objectives of Space Environment utilization WG activities

Space environment utilization is a rather new field of space activities with great potential. It requires a large variety of scientific and technological expertise, which has to be synchronized. Therefore, International Space Station (ISS) utilization is not only for space development, but involves every field of human activities including science, technology, education and culture. The purpose of this Working Group (WG) is to develop ways of sharing these potential values of the ISS with Asian countries through the cooperation on ISS utilization.

The assembly of the entire ISS has been completed and the Japanese Experiment Module “Kibo” of ISS is now fully operational. Furthermore, the Japanese government and other ISS Partners have decided to continue the operation and utilization of the ISS beyond 2015. The space environment utilization activities have entered a new stage, and further cooperation among Asia-Pacific countries in this area is becoming increasingly important.

Kibo is open for collaboration between Asian countries and several collaborative activities have already started. A series of protein crystallization experiments conducted by Malaysia (ANGKASA) since 2009 is a good example of the collaborations. Two feasibility studies on future space experiments in Kibo, one between Korea (KARI) and Japan (JAXA), and another between Indonesia (LAPAN) and Japan (JAXA) are making good progress. It is expected that such activities will expand through regional cooperation.

Careful step-by-step approaches are very important to gain the basic experience required for space environment utilization; therefore promoting basic activities are also a scope of this WG. “Space Seed for Asian Future 2010”, a new project proposed by Asian space agencies in the past APRSAF is an example. In this

project, the plant seeds provided by Asian space agencies were transported by JAXA to ISS/Kibo and retrieved from Kibo by Space Shuttle. These seeds are being utilized for education and outreach in respective countries. Another example is micro-gravity experiment through parabolic air flight in Japan. It started in 2006 and has been providing opportunities for Asian students to participate in these experiments. These opportunities not only help them to learn about microgravity science, but also motivate them to develop their own scientific capabilities. The sixth series of parabolic flights is scheduled in March, 2012.

In this WG, we will discuss how we can promote and improve these activities and how we can enhance its effectiveness, etc. A main subject for discussion will be the possibility of launching a new initiative for ISS/Kibo utilization cooperation. In addition, SEUWG, EOWG and SEAWG will hold a joint session focusing on the Earth view from space by the Astronauts.

2. The results of Space Environment Utilization WG activities in APRSAF-17

See the attached APRSAF-17 adopted recommendations.

3. The Draft Agenda

- 1) Status report on the APRSAF-17 recommendations and actions.
- 2) Status report related to ISS program
- 3) Status of WG activities
 - a) Feasibility Study
 - b) Protein Crystal Growth Experiment
 - c) Status of “Space Seed for Asian Future 2010”
 - d) Status of Student Parabolic Flight Experiment
 - e) Lesson Learned
- 4) Joint session with EOWG and SEAWG
- 5) Launch of a new initiative for Kibo utilization cooperation
- 6) Others



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**Appendix : Indicative schedule of work of the Space Environment Utilization Working Group
(6 -7 December 2011, Singapore)**

Co-Chairs: Dr. Peter Droge (Singapore Space and Technology Association, Singapore)
Mr. Shigeki Kamigaichi (Japan Aerospace Exploration Agency, Japan)

day	time	No.	Agenda items	Presenter
December 6th	9:00-9:10	1	Opening remarks by Co-chairs	JAXA: Mr. Shigeki Kamigaichi
	9:10-9:20			NTU:Dr. Peter Droge
	9:20-9:30	2	Review of the last SEU WG at the APRSAF-17	JAXA:Mr. Shigeki Kamigaichi
	9:30-9:50	3	Report from Host country	Singapore
	9:50-10:20	4	Kibo utilization status and cooperative activities with Asia-Pacific countries	JAXA: Mr. Kazuhiro MIYAZAKI
	10:20-10:50	5	Report from each agency and other participants (about 30 min. each)	Each participating member and agency
	10:50 - 11:00		Short Break	
	11:00 - 12:30	5	Report from each agency and other participants (about 30 min. each)	Each participating member and agency
	12:30 -13:30		Lunch Break	
	13:30-15:00	5	Report from each agency and other participants (about 30 min. each)	Each participating member and agency
	15:00-15:30		Short Break	
		15:30-16:30	6	Report on Kibo Task Force Activities - Results of "Space Seeds for Asian Future 2011" - Parabolic flight experiment Launch of a New Initiative on Space Environment Utilization
	16:30-17:30	6	Discussion on: -Kibo Task Force Activities -Launch of a New Initiative on Space Environment Utilization -Future attempt	All participants
December 7th	9:00 - 9:20	7	Review of Day 1, Agenda modification,	All participants
	9:20 - 10:20	8	Discussion (Continuance of No.6)	All participants
	10:20-10:30		Short Break	
	10:30-11:00	8	Discussion (Continuance of No.6)	All participants
	11:00-11:30	9	Proposal for next step	Chair and All participants
	11:30-12:00	10	Discussion about the summary of the meeting	All participants
	12:00-12:30	11	Review of draft recommendations and action items	All participants
	12:30-13:30		Lunch Break	
	13:30-14:30		Reserve (for additional presentation)	
	14:30-15:00		Short Break	
	15:00-16:00	12	Joint session with EOWG and SEAWG -Keynote Speech "Earth View from the ISS" by Astronaut Mr. Soich Noguchi	JAXA: Mr. Soichi Noguchi