Bridging Space and the Society

Recent Educational Activities in Japan

Committee on the Peaceful Uses of Outer Space, 54th Session
June 2010, Vienna, Austria

Takao Akutsu
Japan Aerospace Exploration Agency (JAXA)
Capacity Building For Space Application

6 capacity building activities support the JAXA initiatives using satellite data

- JAXA-initiated projects, Sentinel Asia, SAFE (Space Applications for Space Environment), etc.

  - Mini-Projects in cooperation with GIC-AIT
  - Oceanic Mini-Projects in cooperation with CREsOS, Udayana University
  - Specialized Training in Japan for both Mini-Projects’ High Achievers
  - ALOS Applications & Verifications Project with LAPAN Indonesia
  - ALOS Applications & Verifications Project with GISTDA Thailand
  - Organizing Capacity Building Activities for Asia Water Cycle Initiative (AWCI)
JAXA Mini-Projects
in cooperation with
Geo-Informatics Center & Asian Institute Technology (GIC&AIT)

1. **Number of Trainees (JFY1995 ~ 2010):**
   More than 1,300 from 27 countries of the Asia-Pacific region

2. **Staff of GIC-AIT:**
   Usually 15 Asian personnel including lecturers and administrative staff

9 Mini-Projects Selected for 2010
(16 participants of 16 organizations from 9 countries)

Bhutan  Indonesia  Kyrgyzstan  Lao PDR  Nepal  Pakistan  Sri Lanka  Thailand  Vietnam
Satellite Technology Capacity building

STAR program since 2009
Capacity building opportunity for young researchers and engineers of space organizations in Asia-Pacific

UNIFORM since 2010
(UNiversity International FORmation Mission)
- MicroSat constellation for wildfire monitoring
- Capacity building for young engineers and students from developing countries.

“Doctorate in Nano-Satellite Technologies“ for post-graduate level students from developing countries by Kyushu Institute of Technology and UNOOSA

Starts in 2011
Opportunity for piggy-back small satellites

- JAXA provides Japanese universities and private companies with opportunities to launch a small satellite as the H-IIA piggy-back.
  *Accommodation of foreign applicants is under the consideration

**Objectives**
- To scout new players to the space development and utilization fields
- To contribute education and training of space engineers.

**Responsibilities**
- JAXA: to provides a satellite deployer, an adapter and launch services including a review before delivery.
- Applicants: to design, manufacture, test and operate own small satellite.
Framework to utilize Kibo in Asia

The Space Environment Utilization Working Group (SEU WG) of APRSAF (Asia-Pacific Regional Space Agency Forum)

- India, Indonesia, Japan, Malaysia, the Republic of Korea, Thailand and Vietnam are presently active members.

- Cooperation schemes and potential joint-research subjects utilizing space environment are discussed.

- Education and capacity building effort in utilizing Kibo are also discussed.

The 17th Session of APRSAF (Australia, 2010) Japanese Experiment Module, Kibo, on the ISS Experiments in Kibo

Astronaut Dr. WAKATA
Asian Seed Project using Kibo

**Space Seed project in Japan**
- Many types of seeds have been transported to Space. Those seeds retrieved from space were planted and brought up. This project is very effective for education.

**Collaboration in Asia**
- JAXA expanded the best practice of Japan into Asia.
- Indonesia, Malaysia, Thailand and Vietnam participate in this project.
- The seeds retrieved from space will return to the owner countries and be used for education.
Other Examples of Kibo outreach

■International micro-G experiments for students
- **Joint micro-G experiments among Japanese, Malaysian and Thai students through parabolic air flight** carried out by JAXA.

■Communication between Asian children and Japanese astronaut in Kibo
- **Scientific questions from Asian children** will be answered by Japanese Astronaut Furukawa’s experimental demonstration in Kibo this summer.
- **Real-time communication** is also planned.

■Promotion of Public Awareness
- **Booklets** (in print & electronically) on space utilization for students, scientists, engineers and ministries
- Some were **translated into Indonesian, Thai, Vietnamese** in addition to English.
Educational collaborations for Asia-Pacific

★ APRSAF Space Education and Awareness Working Group

- **Membership:** Australia, Bangladesh, Cambodia, India, Indonesia, Japan, Kazakhstan, Malaysia, Myanmar, Nepal, Pakistan, Philippines, Republic of Korea, Singapore, Sri Lanka, Thailand, Vietnam, AIT, UNE, UNESCO, UNCOPUOS, UNOOSA

- **Water Rocket Event**
  6th: Australia (2010), 7th: Singapore (Dec. 11, 2011)

- **Poster Contest**

- **Space Education Forum/Seminar (for teachers and/or students)**

- **International CanSat Workshop**

- **International Water Rocket Education Workshop**

★★ Collaboration with International Institute of Space Law (IISL)

Send winner of Asia Pacific Regional Round to the Moot Court Final Round
Global Collaborations for Space Education

★ with regional mechanisms (UNESCO, Space Agencies)
  ➢ Water Rocket Event in Mexico (Nov. 2010)

★ with Japan International Cooperation Agency (JICA)
  ➢ regular meetings from 2010
  ➢ Sending Educational Materials to Nigeria in 2009 and 2010

★ Active contributions to International Space Education Board (ISEB)