The twentieth session of the Asia-Pacific Regional Space Agency Forum

Values From Space: 20 Years of Asia-Pacific Experiences

DATE:
December 3–6, 2013
Working Group Session: December 3 and 4
Plenary Session: December 5 and 6

VENUE:
Melia Hanoi, Hanoi, Vietnam

CO-ORGANIZERS:
Vietnam: Vietnam Academy of Science and Technology (VAST)
Japan: Ministry of Education, Culture, Sports, Science and Technology (MEXT)
Japan Aerospace Exploration Agency (JAXA)

APRSAF-20 was also supported by the following organizations:
Office of National Space Policy,
Cabinet Office, Government of Japan
Ministry of Foreign Affairs of Japan (MOFA)

GENERAL CO-CHAIRS:
Vietnam: Prof. Duong Ngoc Hai
Vice President, Vietnam Academy of Science and Technology (VAST)
Japan: Dr. Keisuke Isogai
Deputy Director General, Research and Development Bureau, Ministry of Education, Culture, Sports, Science and Technology (MEXT)

WEB:
For further information including detailed program, presentation materials, and its recommendations, please visit the APRSAF website: http://www.aprsaf.org/annual_meetings/aprsaf20/meeting_details.php
APRSAF-20 Overview

APRSAF-20 successfully concluded its 4-day program on Friday, December 6, 2013, in Hanoi, Vietnam. Approximately 420 participants from 28 countries and 8 international organizations attended the session.

APRSAF-20, as was the case in the past, consisted of four working group sessions (Please refer to page 4 and 5) that were held in parallel and the plenary. There were also related events in conjunction with APRSAF-20 (Please refer to page 7).

At the plenary session on Day 3, December 5, following opening remarks and keynote addresses, there were also activity reports from countries in the Asia-Pacific region, progressive reports from working groups and initiatives, and special speeches on possible future space cooperation such as asteroid observation and exploration, and on the importance of making international rules on space environment. At the end of the plenary session, the participants of APRSAF-20 endorsed further discussion by the Executive Committee (ExCom) to renovate the framework of working groups to create more socio-economic outcome. The discussion will be reflected in the next session of APRSAF.

In commemoration of the 20th anniversary of APRSAF, a special session was held as part of the Plenary, with the participation of heads of space agencies in the Asia-Pacific region and of former organizers of APRSAF, such as Australia, Indonesia, Japan, Kazakhstan, Malaysia, Mongolia, Singapore, South Korea, Thailand, and Vietnam, addressing the theme of APRSAF-20 “Values From Space: 20 Years of Asia-Pacific region.” The session was concluded announcing the release of the Joint Statement, which was to reaffirm that, through the framework of APRSAF, significant progress in space cooperation in the Asia-Pacific region has been made and that we are committed to continuously expand space activities and their applications for socio-economic development in the region. Another special event was moderated by Japanese astronaut Satoshi Furukawa, introducing space experiments on the International Space Station (ISS) by Vietnam and Malaysia and confirming that the utilization of the Japanese Experimental Module “Kibo” is open to every country in the Asia-Pacific region. During the event, the message from Japanese astronaut Koichi Wakata onboard the ISS, who had deployed the Vietnamese cubesat “PicoDragon” from Kibo in the ISS, was delivered.

It was announced at the end of the plenary session that the next session, APRSAF-21, would take place in Tokyo, Japan.
Earth Observation Working Group (EO WG)

Co-chairs: Prof. Doan Minh Chung, Director of Space Technology Institute (STI)
Dr. Keiji Imaoka, Manager for Earth Observation Research Center, JAXA

EO Working Group

The SAFE Workshop, with 61 delegates from 16 countries, was held on December 2, 2013, and the APRSAF-20 EO WG, with 141 delegates from 23 countries, was held on December 3 and 4, 2013 in Hanoi (Vietnam). The co-chairs would like to express our appreciation for all the efforts that contributed towards the success of these meetings.

1. SAFE
Two new prototyping proposals from Vietnam were approved: Assessment of Coastal Erosion and Flood Forecasting. Proposals from Uzbekistan and Sri Lanka will be revised taking into account guidance from the SAFE Review Board. Eight SAFE prototype executors reported the status of their projects, using the SAFE Project Design Matrix, and the board confirmed the successful completion of one of the prototypes in Sri Lanka.

2. Climate R³
CR³ reported its effort to enhance cooperation between the APRSAF EO WG and global initiatives such as the Group on Earth Observation’s Global Agricultural Monitoring (GEOGLAM) and the Global Forest Observation Initiative (GFOI). In collaboration with the EO WG, a number of new initiatives were discussed, including a possible applications research program using geostationary satellite data from the new Himawari-8 satellite, and new monitoring capabilities for the region in conjunction with polar orbiting missions such as Global Change Observation Mission-Climate (GCOM-C). A regional requirement survey questionnaire was also discussed.

3. EOWG
The EO WG mid-year meeting was successfully organized in Nagoya, and the long heritage of accomplishments in the EO domain during 20 years of APRSAF was recognized. The progress of the GEOGLAM Asia-RICE team, including the provision of rice crop outlook to FAO* AMIS** using agro-meteorological information provided by JAXA and others since October 2013, was recognized. Recognizing the potential and necessity for satellite Earth observations to support the insurance industries, EO WG recommends that these opportunities be studied by APRSAF.

Communication Satellite Applications Working Group (CSA WG)

Co-chairs: Prof. Pham Anh Tuan, Director of Vietnam National Satellite Center (VNSC)
Mr. Hiroki Kohata, Manager for Satellite Technology Innovation Office, JAXA

CSA Working Group

It was our great pleasure to join APRSAF-20 as co-chairs of the Communication Satellite Applications Working Group (CSA WG) and to welcome 66 participants from 12 countries to Hanoi in order to promote new applications of the satellite communications in the Asia-Pacific region.

At this forum, we had a joint session with ICSANE 2013 (International Conference on Space, Aeronautical and Navigational Electronics 2013) to discuss new and viable technical topics of electronics system in spacecraft and ground facilities. This joint session with academic conference was our first experience and fruitful in order to understand the latest technological trend in this region.

We also discussed several topics regarding not only communications satellite system, but also Global Navigation Satellite Systems (GNSS), space-based Automatic Identification System (AIS), space debris, and so on. Some companies, such as NEC, MELCO, TUBITAK Space Technologies Research Institute, and C2N Pte. Ltd., provided information on their satellite systems and applications. On-going and planned activities of the space-based AIS were introduced by JAXA, LAPAN, IHI, and CLS*, and we recognized the potential of mutual cooperation in this field. Moreover, we confirmed the sound deployment of the Multi-GNSS in the Asia-Pacific region hearing the presentations made by JAXA as the secretariat of MGA (Multi GNSS Asia), ISMB**, Hanoi University of Science and Technology, and Keio University.

In the two-day meeting, we discussed the above-mentioned topics in a wide range of satellite communications. Before closing the meeting, we discussed “What we have to discuss in this WG into the future” and agreed to focus on the discussion about the approach to technical cooperation for not only “communications satellite” but also satellite-related technologies.

Finally, we would like to express our thanks to all the members of the CSA WG for their participation and the APRSAF secretariat for their support.

*CLS: Collecte Localisation Satellites (France).
**ISMB: Istituto Superiore Mario Boella (Italy).

*FAO: Food and Agriculture Organization of the United Nations.
**AMIS: Agricultural Market Information System.
Summary reports by working group co-chairs

Space Education & Awareness Working Group (SEA WG)

Co-chairs: Prof. Nguyen ThanhThuy, Vice Rector of UET, Vietnam National University, Hanoi (VNU) Dr. Takashi Kubota, Professor, Department of Spacecraft Engineering, Institute of Space and Astronautical Science (ISAS)/ Space Education Center, JAXA

SEA Working Group

The Space Education and Awareness Working Group (SEA WG) has promoted space education activities since 2001, with the aims of: effectively using space materials to enhance education for young people; providing education and training opportunities for young people in space science and technology; contributing to enhance mutual understanding among countries in the region through exchange opportunities for young people; and increasing public awareness of the societal benefits and importance of space activities.

The SEA Working Group members gathered in Hanoi, Vietnam, on December 3 and 4, 2013, during APRSAF-20. The Working Group meeting was co-chaired by Prof. Nguyen ThanhThuy (Vietnam) and Prof. Takashi Kubota (Japan). Fifty-four participants from 15 countries and 2 international organizations attended the meeting this time, and we actively discussed how to promote space education. The attendees of the WG meeting widely exchanged their opinions on space education activities and confirmed the promotion for various kinds of activities.

The 9th APRSAF Water Rocket Event was successfully held in VAST and Hanoi University of Education, in Hanoi on November 30 and December 1, immediately preceding APRSAF-20, and hosted by VAST/STI. Fifty students, 24 teachers and leaders, and 23 observers from 15 countries participated in the water rocket event.

Furthermore, the working group organized the 8th Poster Contest during APRSAF-20. The theme of the Poster Contest was “Space and Me,” and 37 posters made by children from 13 countries were on display during APRSAF-20. We were moved to see people who were impressed by the 24 flowers and 37 posters made by children from 13 countries during APRSAF-20, and hosted by VAST/STI. Fifty students, 24 teachers and leaders, and 23 observers from 15 countries participated in the water rocket event.

We confirmed in this meeting that we all would promote various kinds of popularization activities for space education through this working group.

Finally, we are deeply grateful to the staff of VAST who hosted this APRSAF-20 and its educational events, especially Mr. Nguyen Vu Giang and Dr. Doan Minh Chung; to the secretariat of SEA WG, Ms. Kaori Sasaki, Ms. Yayoi Miyagawa, and Mr. Takaaki Chris Okano; and also to all the members of the WG and the collaborators.

Space Environment Utilization Working Group (SEU WG)

Co-chairs: Dr. Bui Trong Tuyen, Vice Director, Space Technology Institute (STI) Mr. Yoshiya Fukuda, Director, Kibo Utilization Office for Asia (KUOA), JAXA

SEU Working Group

The Japanese Experiment Module “Kibo” of the International Space Station (ISS) provides unique and useful environment for scientific and technological innovations. The Space Environment Utilization Working Group (SEU WG) has been elaborating to produce excellent results through utilization of the Kibo module.

Preceding the SEU WG meeting at APRSAF-20, The Kibo-ABC (Asian Beneficial Collaboration through Kibo utilization) workshop was held at the Vietnamese Academy of Science and Technology. Kibo-ABC is an initiative to promote the activities leading to the best use of the Kibo module. In 2013, Kibo-ABC conducted the Space Seeds for Asian Future (SSAF) 2013 program and the results were reported. In the program, Azuki bean (red bean) seeds were concurrently grown on board Kibo by an astronaut and on ground by young students. Many young students in the Asia-Pacific region witnessed the difference in the plant growth between space and ground conditions. At the workshop, a simple fall method to produce a half second of microgravity condition was demonstrated.

The working group session was held on December 3 and 4, 2013 with 40 participants from 10 countries. A total of 13 presentations were given, 10 reports by space agencies or educational institutions and 3 reports by students. Space agencies and educational institutions reported their activities and progress in the last year, and expressed their expectations for their future plans. Topics of the reports by students were SSAF2013 and microgravity experiments by parabolic flight.

The recommendations made by SEU WG and Kibo-ABC included the following:

- Encourage SEU WG participants to widely publicize the activity and the benefit of Kibo-ABC activity, and invite new members to join the initiative.
- Encourage SEU WG participants to take the lead in planning and implementing new joint missions to produce beneficial outcome, by sharing the results, lessons learned, and know-hows obtained through the activities including the student’s parabolic flight program.
- Recognized the great educational effectiveness of synchronous space-ground mission like SSAF2013 and the necessity of its continuation.
- Recommend to open proposal for CubeSat Joint Project deployed by ISS. LAPAN is interested in coordination for integration and testing.
- Recommend to conduct simple experiment projects using Kibo facility. Activities will be proposed and coordinated by the member countries.

Finally, we would like to express our appreciations to all the members of SEU WG, Kibo-ABC, and the APRSAF secretariat for their support.
APRSAF AWARD

Reflecting on the recommendations by APRSAF Task Force, the Executive Committee (ExCom) established the APRSAF Award to recognize an organization or an individual for contribution made to advancing the objectives of APRSAF.

The ExCom selected award winners as the following three individuals out of candidates proposed by each working group, for their contribution to APRSAF over 20 years. The award ceremony was held at the Plenary session of APRSAF-20.

Dr. Suvit Vibulsresth
Founder and former executive director of GISTDA of Thailand

He was recommended by the Earth Observation Working Group for his outstanding contribution to the WG from the very beginning. His major contributions include: launching the first initiative of APRSAF, Sentinel Asia; launching the SAFE initiative; and hosting APRSAF-10 in Chiang Mai and organizing APRSAF-16 in Bangkok.

“This is not only for me. It is for all the participants. From the first APRSAF until today, I am just designated to receive this award for all your efforts and your work that you have contributed to APRSAF. Thank you.”

Mr. F. R. Sarker
General Secretary of the Bangladesh Astronomical Society

He was recommended by the Space Education and Awareness Working Group. Mr. Sarker has been a central figure in the WG and specifically recognized for taking the initiative to organize the Space Education Seminar held in January 2011 in Bangladesh, where a groundbreaking 3,000 children participated. He also takes the items that have been organized by the SEA WG back to Bangladesh where he quickly and actively implements them.

“I express my gratitude to APRSAF for giving me this award. Since 2006, I have been regularly participating in SEA WG, and I feel that it is the biggest forum that caters to the knowledge of space technology and application, and I have always hoped that this forum will prosper with the talent, development of space technology and application that you have. Thank you very much.”

Prof. Doan Minh Chung
Director, Space Technology Institute, Vietnam Academy of Science

He was recommended by the Earth Observation Working Group and the APRSAF secretariat. Prof. Chung and STI's major contributions include: playing a leading role in organizing two APRSAF sessions, APRSAF-15 in 2008 and APRSAF-20, this year; launching the initiative of SAFE. He served as the Co-chair of SEA WG at APRSAF-15, a leading role in organizing and managing side events, and let them all to a successful conclusion.

“It is a bit surprise for me to have this honor of the APRSAF award. We have some contribution to APRSAF, but it is as what Dr. Suvit said, this award is not only for my contribution but for the support from our Vietnamese colleagues in Science Technology, especially our colleagues of STI. I would like to bring up this award to our colleagues and to the secretariat. Thank you.”

APRSAF SIDE EVENTS

The APRSAF Secretariat had accepted proposals of side events conducted by APRSAF participating organizations in conjunction with APRSAF-20. Reviewed by co-organizers and ExCom, the following four events were held: Cansat in Hanoi 2013; REDD+ Implementation with Earth Observing Satellites in the Asia-Pacific region; ICSANE2013; and Capacity Building for Space Policy & Law Researches in Asia-Pacific region.

For details of the APRSAF side events, please visit the following website:
http://www.aprsaf.org/annual_meetings/aprsaf20/side_events.php
APRSAF RELATED EVENTS

New Cooperation Session
To discover new ideas for future cooperation, a New Cooperation Session was organized by the ExCom on December 3, 2013, at Melia Hanoi. Six proposals for cooperation were presented and they are expected to be discussed by the ExCom or working groups after APRSAF-20.
All proposals can be seen at the following website:
http://www.aprsaf.org/annual_meetings/aprsaf20/new_cooperation_session.php

SAFE Workshop
On December 2, the SAFE (Space Applications For Environment) workshop was held at Melia Hanoi. Sixty-one participants from many countries and international organizations participated. At this workshop, four proposals were reviewed and two of them, both from Vietnam, were approved as new SAFE prototyping projects. Progress reports on ongoing projects were also presented.
For details, please visit the SAFE portal:
http://www.eorc.jaxa.jp/SAFE/events/aprsaf20_report.html

Kibo-ABC Workshop
On December 2, the Kibo-ABC (Asian Beneficial Collaboration through Kibo Utilization) workshop was held at VAST. Participating countries reported their activities related to the Space Seeds for Asian Future 2013 and exchanged their lessons learnt from the experience for further improvement of Kibo-ABC activities. In addition, simple free fall experiment, for observing microgravity phenomena, was demonstrated.

Water Rocket Event
On November 30 and December 1, Water Rocket Event was held at VAST and the Hanoi University of Education, with students and their teachers participating from 15 countries. On the first day, the students introduced their team and country, followed by special lectures on space activities from VAST representative. On the second day, students made their rockets with materials given on site and launched them for competing. During the two-day event, participating students made friends with each other and it is expected that they will one day work together on future projects.

Poster Contest
During the sessions of APRSAF-20, Poster Contest was held at Melia Hanoi. The theme of the contest this year was “Space and Me,” and it targeted children between 8 and 11 years old. Among 37 posters from 13 countries, a total of five awards, including one best APRSAF poster award, two special APRSAF poster awards, JAXA award, and VAST award, were selected.
For details, please see the summary report of SEA WG:
http://www.aprsaf.org/annual_meetings/aprsaf20/pdf/program/day4/D4_7_sea.pdf

APRSAF Exhibition
The exhibition was held during the sessions of APRSAF-20 at Melia Hanoi. There were eight display booths: IHI Group, Japan Aerospace Exploration Agency (JAXA), Japan Manned Space Systems Corporation (JAMSS), Kibo-ABC, Mitsubishi Electric Corporation, NEC Corporation, and Remote Sensing Technology Center of Japan (RESTEC).
MESSAGE FROM APRSAF COMMUNITY

In this column, APRSAF community members take turns to provide their comment on APRSAF. In this issue, the APRSAF secretariat conducted an interview with Mr. Lau Yun Wee, Market Development Manager at the Centre for Remote Imaging, Sensing and Processing (CRISP), National University of Singapore (NUS). Mr. Lau Yun Wee has just finished his term serving as a member of APRSAF ExCom.

What is the result of ExCom during your term?

During the initial meetings at the APRSAF Task Force in 2012, before the formation of the ExCom, all the participating members, including representatives from DIISRTE* (Australia), ISRO (India), LAPAN (Indonesia), JAXA (Japan), ANGKASA (Malaysia), KARI (Republic of Korea), GISTDA (Thailand), VAST (Vietnam), and CRISP and Singapore Space and Technology Association (SSTA) (Singapore), brainstormed on ideas on how to further improve the organization of the forum.

Following the recommendations by APRSAF Task Force, establishment of ExCom was endorsed at the end of APRSAF-19. In the last year, members of ExCom, such as CRISP, ANGKASA, VAST/STI, JAXA, and WG chairs, discussed various issues including review of APRSAF Principle, establishment of Guidelines for APRSAF Initiatives and Side Events, coordination of APRSAF-20 program, and proposals of WG reformation.

I am glad to know that some of its works have already been implemented during APRSAF-20, such as setting up the New Cooperation Session, where participants can propose new ideas for future cooperation. We planned to hold the Special Session by Heads of Space Agencies and Former Organizers of APRSAF concluding to release the Joint Statement and the Special ISS event in the presence of astronauts. We also set up the APRSAF Award and selected three people who have contributed to advancement of APRSAF for a long time.

What, in your opinion, will be or should be the future of APRSAF?

APRSAF should continue to create the platform to encourage discussions and sharing of knowledge among all participants so to improve the lives of human beings with the use of space-related research and development technology. It will also be good to have more research and development collaboration initiatives by different organizations.

Do you have any message for the APRSAF community members?

Please continue to support APRSAF and share your knowledge with one another.

* Current DIICCSRTE.

APRSAF-21 TO BE HELD IN TOKYO, JAPAN

The next session of APRSAF, APRSAF-21, will be held from December 2–5, 2014, at the National Museum of Emerging Science and Innovation (Miraikan) in Tokyo, Japan. It will be co-organized by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) and the Japan Aerospace Exploration Agency (JAXA). Updates will be posted on the APRSAF-21 website, and will be circulated through our News Mail as well when necessary. To subscribe to our News Letter/News Mail, please fill in the form at: https://www.aprsaf.org/newsmails_newsletters/form/

We welcome your updates on space-related activities and also your comments and suggestions to the APRSAF Secretariat.

For further information about APRSAF, please visit http://www.aprsaf.org

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APRSAF

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