Sharing Solutions through Synergy in Space

Meeting Details

DATE:
December 1–4, 2015

VENUE:
Discovery Kartika Plaza Hotel, Bali, Indonesia

ORGANIZERS:
Ministry of Research, Technology and Higher Education of Indonesia (RISTEK-DIKTI)
National Institute of Aeronautics and Space of Indonesia (LAPAN)
Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT)
Japan Aerospace Exploration Agency (JAXA)

APRSAF-22 WAS ALSO SUPPORTED BY THE FOLLOWING ORGANIZATIONS:

Office of National Space Policy, Cabinet Office, Government of Japan
Ministry of Foreign Affairs of Japan (MOFA)
Ministry of Internal Affairs and Communications (MIC)
Ministry of Agriculture, Forestry and Fisheries of Japan (MAFF)
Ministry of Economy, Trade and Industry (METI)

Ministry of Land, Infrastructure, Transport and Tourism (MLIT)
Ministry of the Environment (MOE)
Japan Meteorological Agency (JMA)
Japan International Cooperation Agency (JICA)
Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

General Co-chairs

Prof. Dr. Thomas Djamiluddin
Chairman, National Institute of Aeronautics and Space (LAPAN), INDONESIA

Mr. Akinori Mori
Deputy Director General, Research and Development Bureau, Ministry of Education, Culture, Sports, Science and Technology (MEXT), JAPAN

For further information including detailed program, presentation materials, recommendations, and photos, please visit the APRSAF website: http://www.aprsaf.org/annual_meetings/aprsaf22/meeting_details.php
The twenty-second session of the Asia-Pacific Regional Space Agency Forum (APRSAF-22) successfully concluded its 4-day program on Friday, December 4, 2015, in Bali, Indonesia. The session was attended by 478 participants from 28 countries and regions, as well as 10 international organizations.

APRSAF-22 consisted of the Plenary session and four working group sessions that were held in parallel reorganized at APRSAF-21 last year. There were also relevant events in conjunction with APRSAF-22. On Day 2, the Evening Talk by the Space Foundation and the New Cooperation Session with eight proposers who made their presentations were also held.

At the Plenary session on Day 3, December 3, Prof. Dr. Thomas Djamiluddin, Chairman of LAPAN delivered Opening Remarks, emphasizing the importance of APRSAF as a regional cooperation framework and recognizing space technologies could contribute to societal benefit through APRSAF. Dr. Jumain Appe, Director General for Innovation Enhancement of RISTEK-DIKTI, and Mr. Akinori Mori, Deputy Director General, Research and Development Bureau of MEXT, followed, offering Welcome Remarks. Dr. Toshio Koike, Professor, Department of Civil Engineering, The University of Tokyo, JAPAN, made Keynote Speech, addressing the efficacy of utilizing satellite data and the importance of promoting regional cooperation, mainly focusing on water resource management and climate change.

Following the remarks and speech, Summary of APRSAF-21 and ExCom Activity Report by Mr. Yoshi-nori Yoshimura, Chair of APRSAF Executive Committee (ExCom), and activity reports from countries in the Asia-Pacific region were delivered.

Three Special Sessions were also held on Day 3 focusing on maritime applications, regional cooperation in utilizing space, and space exploration. (Please see page 6 and 7 for details of the special sessions.)

At the beginning of Day 4, December 4, entities from other region and international and regional organizations made their presentations, followed by a report on APRSAF-related project, MGA (Multi-GNSS Asia) activities.

Four working groups, Space Applications Working Group (SAWG), Space Technology Working Group (STWG), Space Environment Utilization Working Group (SEUWG), and Space Education Working Group (SEWG), reported the results from Day 1 and 2 and presented their recommendations to the Plenary.

At the end of the Plenary session, the participants of APRSAF-22 adopted the Recommendations. The Philippines made a presentation on its hosting APRSAF-23 in 2016.

In addition to the main session, there were APRSAF related activities, namely Sentinel Asia Initiative Tsunami Working Group Session, SAFE Initiative Workshop, Kibo-ABC Initiative Workshop, Water Rocket Event, Poster Contest, APRSAF-22 Exhibition, and 7th Multi-GNSS Asia (MGA) Conference, all of which were successfully concluded. There were also APRSAF Side Events, such as the 2nd Asia-Pacific Space Generation Workshop (AP-SGW2), Workshop on “The Future of Space Activities in the Asia Pacific Region,” and 2015 IEEE International Conference on Aerospace Electronics and Remote Sensing Technology (ICARES 2015), that were well conducted.
The Space Applications Working Group (SAWG) was successfully held on December 1 and 2 with 179 participants from 19 countries and 12 international/regional organizations. We confirmed the progress of various activities such as SAFE (Space Applications For Environment), Sentinel Asia, agriculture applications, GNSS (Global Navigation Satellite System) applications, forest applications, water resources applications, and accelerated discussions of the launch of potential new APRSAF initiative involving synergistic applications of geostationary and low Earth orbit satellites. It was a great pleasure to confirm some international and regional projects and initiatives in agriculture and other fields have proceeded along with the SAWG activities. At the host country session, we understood the status of environmental ocean monitoring in Indonesia and Japan, agreed that space is a very useful tool for this application field in the Asia-Pacific region, and paved the way to future collaborations between two countries.

We have adopted the following recommendations: Firstly, to encourage joint activities with development aid agencies such as JICA (Japan International Cooperation Agency) and ADB (Asian Development Bank), further cooperation with GEO (Group on Earth Observations) such as through mutual technical assistance, and further partnerships with international organizations and initiatives such as UN-ESCAP (Economic and Social Commission for Asia and the Pacific), SERVIR-Mekong, MRC (Mekong River Commission), and ASEAN (Association of South-East Asian Nations). Secondly, to develop new social applications (including fire detection, and wide-range air and smoke pollution monitoring) based on the data from both geostationary (e.g., Himawari-8) and low Earth orbit (e.g., GCOM-C) satellites in combination with Multi-GNSS and ICT, in support of the establishment of a new initiative at APRSAF-23.

For the purpose of more expansion of space applications in the Asia-Pacific region, we will follow the recommendations with APRSAF partners and hope to make a good report at the next Space Applications Working Group of APRSAF-23 in Manila, Philippines.

Approximately 160 people from 20 organizations and entities of 11 countries have participated in the STWG and actively discussed the following topics:

- technological strategies and cross-cutting technologies focused on small satellites;
- applied technologies of high interest in the Asia-Pacific region such as AIS (Automatic Identification System) and GNSS (Global Navigation Satellite System);
- engineering management such as systems engineering indispensable for practical application of space program;
- monitoring, reduction, and removal of space debris for risk mitigation;
- launch environment and orbit experiment demonstration.

Especially there was strong interest in technology management, including systems engineering and project management, ensuring reliability and quality control, and there were lively discussions in the sessions on those topics.

In addition, panelists exchanged views on various efforts on capacity building and training, sharing the challenges in each country and the expectations toward regional cooperation to solve the issues. The following recommendations were unanimously adopted at the end of the working group session:

A) To promote cooperation opportunities and more participation by sharing activities and experiences of space technology, small satellites and launch opportunities, technology management, etc. in this area;
B) To promote information exchange and participation about capacity building and training opportunities in each country, especially seeking opportunities for collaboration among space agencies, industries, universities, and laboratories to stimulate active discussions;
C) To recognize the importance of taking measures with respect to space debris and promote information exchange and discussion regarding technical issues on space debris control and their removal;
D) To strengthen cooperation among space agencies, industries, universities, and laboratories as efforts toward capacity building for development of small satellites and their applications;
E) To promote the continuation of this WG beyond this year for active space development in the Asia-Pacific countries, as it provides excellent opportunities to discuss space technologies.

Chairs thank all the participants and are looking forward to meeting many people again in the Philippines.
Regarding the Kibo utilization, Indonesia reported the feasibility study in space program of the fruits ripening process and the developing of CubeSat for educational purpose. It also presented the utilization plan of J-SSOD (JEM Small Satellite Deployer) from several countries. Following the successful experiment of the ExHAM (Exposed Experiment Handrail Attachment Mechanism) on Kibo’s exposed facility, the WG encouraged the member countries to use this new device for exposure experiment.

In addition, in the session of space medicine, the importance of human health in the space exploration particularly for the Mars mission was considered. With the increasing number of human activities in space, especially the increasing number of spacecraft, it would require compliance to the space law that regulates the activity in space. This space law topic was also interesting to be discussed.

Commercial service is also available in the ISS. The C-PCG (Commercial Protein Crystal Growth) service is offered to investigate protein crystal growth. To encourage the member countries in submitting the proposal for the space experiment with the external funding and user fees, some measures of acquisition of research and sponsorship were also introduced.

"The 1st Space Exploration and Kibo Utilization for Asia Workshop" was reported as the one remarkable new activity. Based on new feasibility study started in this workshop, recognizing the importance of this collaboration activity, the second workshop is tentatively planned to be held in an Asian country in 2016.

The SEU initiative, Kibo-ABC workshop, was held with 47 participants from 9 countries. All member countries were invited to be involved in the project named AHiS (Asian Herb in Space) proposed by Malaysia’s ANGKASA. Also they were invited to submit the proposal for the “Asian Try Zero-G” experiment named AHiS (Asian Herb in Space) proposed by Malaysia’s ANGKASA.

At the SEUWG, 61 participants from 11 member countries shared their activities.

The SEWG was attended by 53 participants from 13 countries and 2 international organizations. The major activities in 2015 consist of:

1. Water Rocket Event
2. Poster Contest
3. Distribution and promotion of educational materials and activities domestically and internationally.

The eleventh APRSAF Water Rocket Event was held in Bali, Indonesia, on November 28 and 29, 2015. A total of 58 students and 24 teachers and leaders as well as 40 observers from 13 countries participated in the event.

The tenth APRSAF Poster Contest was held under the theme entitled “Careers in Space.” Thirty-two selected posters had been submitted from 11 countries. One best APRSAF Poster Award and 2 Special Poster Awards were selected by 195 votes casted by APRSAF-22 participants.

Space education materials and activities were introduced during the meeting by participating countries and organizations.

With regard to enhancing space education opportunities for the future host of APRSAF, the SEWG agreed to hold the space education activities for the local students and/or teachers in the Philippines in conjunction with APRSAF-23. The Philippines proposed to have a special parallel activity on CanSat Competition in conjunction with the 12th APRSAF Water Rocket Event, for children ages 15 to 18, and invites other participating countries to attend.

The Space Education Working Group reported to the plenary session the following recommendations:

1. To further promote educational activities, using space as a method, that will be beneficial for the human resource development of the next generation;
2. To continue to conduct the Water Rocket Event and Poster Contest as means of generating young people’s interests in space and nurturing their creativity and innovative thoughts;
3. To continuously collaborate in self-initiated educational programs in Asia-Pacific countries, in particular for motivating initiatives in host countries of APRSAF.
Special Sessions at Plenary

During the Plenary Session at APRSAF-22, three special sessions were conducted to discuss some of the most important issues relating to space today: maritime applications, space applications to solve national and regional issues, and space exploration.

The Special Session 1, “Space and Maritime Applications,” was featured by LAPAN to showcase ongoing projects utilizing space technologies for maritime issues. Talks were given by representatives from user agencies in Indonesia, such as Mr. Arif Rahman, Secretary to the Deputy Minister for Infrastructure Affairs, Coordinating Ministry of Marine and Natural Resources, and Ms. S. Alina Tampubolon, Director of Fisheries Management and Surveillance, Ministry of Marine Affairs and Fisheries, giving the country’s situation and issues concerning maritime affairs and its around, followed by a presentation by Dr. Orbita Roswintiarti, Deputy Chairman for Remote Sensing Affairs, LAPAN, as a data provider, highlighting how space applications can work with these issues. Finally, Mr. Norimasa Ito, Satellite Applications and Operations Center, JAXA, showed some precedents in Japan, introducing the contribution of space technology to fishery and maritime monitoring. Participants shared acknowledgment of encouraging active support for further expanding utilization.

The second special session entitled “Synergy in Space” was moderated by Dr. Yasushi Horikawa, previous Chairman of UNCOPUOS, Technical Counselor, JAXA. To begin with, representatives from Sentinel Asia and SAFE reported their achievements and challenges in tackling regional issues including natural disasters and environment problems, followed by good examples provided by the Philippines, Myanmar, and Indonesia. The session also invited international players, such as the Asian Institute of Technology (AIT) that provides technical supports for Sentinel Asia and SAFE, the Asian Disaster Reduction Center (ADRC) that works as a coordinator between JAXA and disaster management agencies through the framework of Sentinel Asia, and the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) that integrates countries and entities beyond the border to deal with a disaster as it is not limited within the border. The session concluded, confirming the importance of cooperation by optimizing each organization’s experiences, technologies, and know-how, which led to generating synergy.

Recognizing the importance of worldwide discussion concerning space exploration, the third special session focuses on how we in the Asia-Pacific region can cooperate. Entitled “Regional Cooperation on Space Exploration,” moderated by Astronaut Soichi Noguchi, President, Association of Space Explorers, the session first had a report from Kibo-ABC, then a progressive report regarding space environment utilization by Indonesia. After a special message from Astronaut Kimiya Yui from the ISS, NASA presented its plan for Mars exploration, and JAXA introduced a roadmap of the International Space Exploration Coordination Group (ISECG) as well as JAXA Space Exploration Innovation Hub. The session called for the importance of promoting regional cooperation toward the global space exploration endeavor.
Interview with Dr. Orbita Roswintiarti, LAPAN

“Every country has their own specific experience and sharing it will give us more preparedness” — Dr. Orbita Roswintiarti, Deputy Chairman for Remote Sensing Affairs, LAPAN

LAPAN organized the special session 1 “Space and Maritime Applications” as one of the important topics in Indonesia right now. One of the panelists of the session, Dr. Orbita Roswintiarti, Deputy Chairman for Remote Sensing Affairs, LAPAN, provided her comments regarding the importance of the maritime applications in Indonesia and how LAPAN deals with it.

- Why did LAPAN come to bring maritime applications to the theme of the special session?

As you know, our new President was elected in October 2014 and one of his visions is to have Indonesia back to as a maritime country. We are surrounded by seas, so the maritime component is very vital. Sometimes people get information from the news, but they do not really know what to do with our big country with a lot of natural resources. This is the spirit that we chose this theme during APRSAF-22. Indonesia has a similarity with Japan, in terms of disasters as well as with some other Asia-Pacific countries. Therefore, many countries can be involved in this issue as well.

- How does LAPAN work on the maritime applications in Indonesia?

Our main task is to provide the remote sensing data for the government ministries/agencies, the forces, the police, and the local governments. Furthermore, we collaborate and cooperate with them for the use and benefit of the space technology and applications. By integrating with the in-situ data provided by the government institutions, the accuracy of the data becomes increasing. Often times, we have to actively approaching and defining what are the essential needs from the end users. This is the strategy that we have done for the past few years by requesting them to use remote sensing based information and holding meetings. We have then closely communicated with the related institutions. This is quite challenging, but we are always happy to do it and want to make it continue.

- How do you work with APRSAF community countries to achieve it?

In order to increase our capabilities, LAPAN should collaborate with international organizations and agencies. We cannot just do it by ourselves. So, it is like all should work together. We are very open to sharing our experience with other countries. I believe every country has their own specific experience and by sharing it with others will give us more preparedness for any cases. By learning and interacting more, I believe that the space applications can also be improved, then we will have more advanced development on input that we can provide for.

As it is known, LAPAN has already launched some microsatellites. From their data, we gathered a lot of information. Moreover, we also learn how other countries, such as the Philippines, Singapore, and Japan, are working with their microsatellites and how we could collaborate. I believe by the next APRSAF, LAPAN-A2 data have been available to be shared with other countries. Of course, with more data, we could also target the accuracy and the frequency of monitoring for the maritime areas, disasters, natural resources, etc.
MESSAGE TO APRSAF COMMUNITY

In this column, APRSAF community members take turns to provide their comment on APRSAF. In this issue, Mr. Raul C. Sabularse, Deputy Executive Director, Philippine Council for Industry, Energy and Emerging Technology Research and Development (PCIEERD), Department of Science and Technology (DOST), Republic of the Philippines, shares with us his insights for the Philippines as host organizer of the next session of APRSAF.

What do you expect from joining the activities of APRSAF?
I can see the large potential of APRSAF as a platform for sharing information. It is a gathering of experts and of several countries that have rich experiences on the utilization of space technologies. We benefit from their sharing of knowledge and experiences with our own researchers and experts. We expand our contacts and hopefully develop meaningful partnerships and collaboration with them in the future. This will help speed up our country’s development in terms of space technologies. I would say the Philippines is already late in the space technology program, but the experiences from the APRSAF community will help us firm up our own space technology program development.

The Philippines has actively participated in Sentinel Asia.
Yes. The Philippines does not have a space agency yet is actively using space technology for disaster management and resources assessment. The government has recognized the benefits and we have invested, for example, in the nationwide mapping using space technologies. We also make use of LIDAR (Light Detection and Ranging) mounted on airplane for mapping.

As a country that has been utilizing space technologies by using satellite data of other countries, the Philippines can be a good model for similar countries in the Asia-Pacific region.
It is not necessary to own a satellite to benefit from space technologies, as we can use other countries’ satellites for applications. For some countries, this may be the best option. Showing a good model is in a way contribution to APRSAF. It is fortunate that some countries really respond to the needs of other countries, especially to developing countries for which it is too expensive to have a satellite.

In that sense, can APRSAF be described as a useful framework for Asian countries?
I believe so. The fact that the APRSAF community is growing and expanding is a proof that APRSAF is useful and beneficial. I expect that APRSAF will continue to grow in the future and expand its reach because of the benefits that countries get in participating in its activities.

APRSAF-23 to be held in the Philippines

The next annual session of APRSAF, APRSAF-23, will be held from November 15 to 18, at Sofitel Philippine Plaza Manila, in Manila, the Republic of the Philippines. It will be co-organized by Department of Science and Technology (DOST), the Department of Foreign Affairs of the Philippines (DFA), the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT), and the Japan Aerospace Exploration Agency (JAXA). The main theme of APRSAF-23 is “Building a Future through Space Science, Technology and Innovation.” Any updates will be posted on the APRSAF-23 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 online form at: https://www.aprsaf.org/newsmails_newsletters/form

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