Meeting Details

DATE:  
November 15-18, 2016

VENUE:  
Sofitel Philippine Plaza Manila, Manila, Philippines

ORGANIZERS:  
Philippines:  
Philippine Council for Industry, Energy and Emerging Technology Research and Development - Department of Science and Technology of the Philippines (DOST-PCIEERD)

Japan:  
Ministry of Education, Culture, Sports, Science and Technology (MEXT)  
Japan Aerospace Exploration Agency (JAXA)

APRSAF-23 WAS ALSO SUPPORTED BY THE FOLLOWING ORGANIZATIONS:

Philippines:  
Advanced Science and Technology Institute (DOST-ASTI)  
Philippine Institute of Volcanology and Seismology (DOST-PHIVOLCS)  
Science Education Institute (DOST-SEI)  
Department of Tourism (DOT)

Japan:  
National Space Policy Secretariat, 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 (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)

For further information including detailed program, presentation materials, recommendations, and photos, please visit the APRSAF website:  http://www.aprsaf.org/annual_meetings/aprsaf23/meeting_details.php
The 23rd session of the Asia-Pacific Regional Space Agency Forum (APRSAF-23) concluded its four-day program successfully on Friday, November 18, 2016, in Manila, Philippines. APRSAF-23’s theme was “Building a Future through Space Science, Technology, and Innovation.” It was co-organized by the Philippine Council for Industry, Energy, and Emerging Technology Research Development of the Department of Science and Technology (DOST-PCIEERD), Japan’s Ministry of Education, Culture, Sports, Science and Technology (MEXT), and Japan Aerospace Exploration Agency (JAXA). It was attended by 576 participants from 33 countries and regions, and 10 international organizations.

Similar to previous APRSAF sessions, APRSAF-23 consisted of four parallel working group sessions on Day 1 and Day 2, and the plenary session of the APRSAF-23 commenced on Day 3. It was co-chaired by Research and Development Undersecretary Rowena Cristina L. Guevara from the DOST and Research and Development Bureau Deputy Director General Ryuichiro Shirama from the MEXT. It began with an opening speech by DOST-PCIEERD Executive Director Carlos Primo C. David and welcome remarks by the plenary session’s co-chairs. DOST Secretary Fortunato T. De La Peña delivered a keynote speech, stating the usefulness of the space and introducing the application of space and an expectation of establishing a national space agency in the Philippines to solve social problems.

Following opening remarks and keynote speech, there were also activity reports from countries in the Asia-Pacific region, progressive reports from working groups and initiatives.

Two special sessions were held during the plenary session on Day 3. The first special session, titled “Space for Society: Technology Mitigates Natural Disasters,” was organized by the DOST. This session introduced the utilization of space technologies (e.g., satellite data for agricultural drought management, disaster risk reduction and management), and activities of Sentinel Asia, GSMaP (Global Satellite Mapping of Precipitation) Application to Landslide Warning System (GLAWS), and Committee on Earth Observation Satellites (CEOS) Disaster Risk Management.

The second special session, titled “Small Satellites for Innovation; DIWATA-1 Highlights: Breakthrough by Collaboration, Fostering the Next Generation,” presented the success story of “DIWATA-1,” which is the Philippines’ first microsatellite, and the potential of small satellites. DIWATA-1 was developed and launched under the PHL Microsat program. Meanwhile, JAXA International Space Station (ISS) Program Manager Koichi Wakata introduced the activities that utilize “Kibo,” which is a Japanese experimental module on the ISS from where DIWATA-1 was deployed.

At the beginning of Day 4, activity reports on space cooperation in the Asia-Pacific region were made by related entities and international organizations including GEO, UNESCAP, ADB, APSCO.

Following the reports from the working groups and participating countries and entities, leaders from the Asia-Pacific region shared their observations on APRSAF and visions for building a future through space science, technology, and innovation in a wrap-up session. Afterward, the Indian Space Research Organization (ISRO) made a proposal on its hosting of APRSAF-24 in Bengaluru, India from November 14 to 17 in 2017.

At the end of the plenary session, the participants confirmed the recommendations from APRSAF-23 and reaffirmed their continuous efforts to build a future through space science, technology, and innovation.
The Space Applications Working Group (SAWG) was successfully held on November 15 and 16 with 247 participants from 23 countries and 9 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 and agriculture applications, water resources applications, integrated applications with geostationary and low Earth orbit satellites as well as small satellite constellations, and regional cooperation/development aid agency cooperation. It was very gratifying to see that international and regional projects and initiatives in agriculture, water, disaster and other fields have proceeded alongside SAWG activities to move toward the practical use of satellite data in social beneficial areas such as agriculture and water in the Asia-Pacific region. SAWG also acknowledged the 10-year anniversary of the Sentinel Asia initiative launched at APRSAF-12 (Kitakyushu, Japan) in 2005, and confirmed the beneficial contributions the initiative had made during 221 activations of emergency Earth observation satellite operations to contribute to disaster mitigation as well as capacity development to use Earth observation satellite data in the Asia-Pacific region. At the host country session, we were made aware of the status of natural disaster monitoring and small satellite applications in the Philippines.

We have adopted the following recommendations: First, 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), UNESCO, UN-HELP/IFI (International Flood Initiative), ERIA and ASEAN (Association of Southeast Asian Nations). Second, to develop new social applications (including redetection, and wide-range air and smoke pollution monitoring) based on data from both geostationary (e.g., Himawari-8) and low Earth orbit (e.g., GCOM-C and small satellites) satellite constellations in combination with Multi-GNSS and ICT, in support of the implementation of new demonstration projects for forest fire/haze and ocean environment monitoring.

For the purpose of further expansion of space applications in the Asia-Pacific region, we will follow the above recommendations with our APRSAF partners and hope to present a good report at the next SAWG of APRSAF-24 in Bengaluru, India.

Approximately 188 people from 26 organizations and entities of 14 countries have participated in the STWG and actively discussed the following topics:

- Progress and achievements of various small satellite missions that jointly provided platforms for cost-effective scientific missions and capacity building with the Space Application Working Group, for enhanced synergy in developing space technology and its applications;
- Efforts and accomplishments in building test facilities and requirements for performing small satellite tests;
- Low-cost and frequent launch/experiment opportunities for small satellites and examples exploiting such opportunities, jointly with the Space Environment Utilization Working Group;
- Various technologies and endeavors in mission instruments, space debris mitigation and space exploration as well as spacecraft architecture;
- Ground station networks for small satellites and their constellations;
- Engineering management including quality management, project management and systems engineering for full-scale satellites and for small satellites;
- Current initiatives, proposed opportunities and experiences in capacity-building efforts;

We recognized a strong interest among participants in satellite development, test facilities, capacity building/training, and launch opportunities for small satellites and vigorous discussions on these topics took place during the sessions. In addition, we observed increasing collaborations in satellite development, testing, launch, capacity building, and training among various countries and universities, while pioneering efforts under international frameworks were undertaken by private sectors to meet new and unprecedented challenges. The following recommendations were adopted at the end of the working group session:

- Encourage information exchange on activities and experience of end-to-end space technologies that include satellite and mission instrument technologies, ground systems and operations, launch and experiment opportunities, testing, engineering management, and data utilization of each country in the Asia-Pacific region, aiming to enable and sustain space activities, particularly in the development and utilization of small satellites. And to strengthen relationships that will bring more opportunities for participation and cooperation;
- Further encourage information exchange on capacity building programs and training opportunities in the region;
- Call for discussions and information exchange on international rules for addressing space debris toward further space development;
- Encourage cooperation among space agencies, universities, research institutes and the private sector for enhanced synergy and interaction;
- Affirm the continuation of this working group in order to create an environment for new cooperation activities and promote innovation in space technology that contributes to the space industry in the region, and to continue the cooperation among working groups for topics of common interests;
The SEUWG was successfully held on November 15 and 16 with 74 participants from 14 countries. The first special joint session of the SEUWG and the STWG was also held in order to encourage activities in the development, launching, and applications of microsatellites, including the use of Kibo Exposed Facilities (EF). DIWATA-1, the first Philippine 50 kg-class satellite, was featured in APRSAF-23. It was successfully deployed from Kibo/J-SSOD (JEM Small Satellite Orbital Deployer) in April 2016, setting the trend for increased demand from Asia-Pacific nations for microsatellite deployment. Several plans and proposals for space environment utilization were shared and discussed, and we have adopted the following recommendations:

(A) To further promote coordination in a concrete manner for Kibo utilization in order to make the most of Kibo, based on the decision by Japan to extend its participation in ISS operations until 2024;

(B) To accelerate activities toward realizing Kibo EF utilization in consideration of the social benefits and positive ripple effects created by CubeSat deployment missions, as well as the present progress regarding a utilization system that is ready for material exposure experiments, which are useful for satellite design.

A SEUWG initiative, the Kibo-ABC workshop, was held on November 14 with 63 participants from 13 countries. Information on activities and outcomes related to Asian Try Zero-G 2016 (held in 2016 by Indonesia, Japan, Malaysia, New Zealand, Singapore, Thailand, and Vietnam) were shared by the participants. In order to make such missions exemplary cases of cooperation among nations—as evidenced by the success of Asian Try Zero-G 2016, a draft for an action plan was discussed for more fruitful Kibo-ABC missions. The following recommendation was made:

(A) To improve Kibo-ABC missions as a regional cooperation program at governmental and national institution levels, aiming to maximize the outcome of such missions through active participation by a greater number of people, given its influence on promoting Kibo utilization, as well as the significance of their missions, in particular for young people in the Asia-Pacific region; We thank all the participants and will follow the above recommendations with other Asian countries with the aim of expanding Kibo utilization.

The SEWG annual meeting was attended by 89 participants from 13 countries/region and three international organizations.

The 12th Water Rocket Event was held November 12-13 in Laguna Province with 54 participating students, 24 teachers and 16 observers from 13 countries. The program included presentations by students from each country, an educators’ workshop, a cultural tour, water rocket construction and launch competition, and closing ceremony. A student from Malaysia took 1st place.

For the 11th Poster Contest, under the theme “My Dream Planet,” 34 entries were received from 12 countries. Altogether, 203 votes were cast, exceeding the record set last year. The Best Poster Award went to a student from Malaysia. Given the great success of both events, the working group agreed to stage these events next year at APRSAF-24.

Moreover, as an initiative of the host country, a Can Satellite Competition was held as a special event in parallel with the Water Rocket Event. The competition included CanSat launches, data analysis and presentation of the results. Ten teams from five countries participated, with the Philippines being declared the winner.

During the SEWG annual meeting, 25 presentations were given, including nine country updates and 10 topics regarding space education. Another highlight of the meeting was the demonstration/sharing of space education materials. Hands-on activity material to develop communication skills was demonstrated. During the discussion about furthering opportunities for educators, the working group noted the successful outcomes of Space Education Seminars in 2016 and agreed to consider conducting another seminar in 2017 either in Indonesia, Nepal or Thailand.

The SEWG members appreciate the active involvement of participants in SEWG activities over the past year and look forward to continued collaboration to further promote space education to young people and educators in Asia-Pacific countries.
SAFE Initiative Workshop

SAFE (Space Applications for Environment), one of the initiatives of APRSAF, organized a workshop on November 14. The workshop discussed new prototype activities in relation to “Forest fire and smoke haze (Indonesia)” and clarified the advancements made in the eight current prototypes.

Kibo-ABC Initiative Workshop

Kibo-ABC, another initiative of APRSAF, also conducted a workshop on November 14. The participants of the workshop recognized the opportunities for member countries to take initiatives to develop their own missions while expanding their cooperation with JAXA. The participants shared information about the activities and outcomes of Asian Try Zero-G 2016, which was regarded as a success considering its positive ripple effect on Asia-Pacific countries.

Water Rocket Event and the Can Satellite Competition

The Water Rocket Event and the APRSAF Can Satellite Competition organized by DOST and JAXA were held on November 12 and 13 at the University of the Philippines Los Baños. The water rocket event saw 54 students, 24 educators, and 16 observers from 13 countries participate in the contest and the Can Satellite competition had 24 students, 7 educators, and 1 observer from 5 countries participate in it.

Poster Contest

The APRSAF Poster Contest was held along with APRSAF-23. The theme of the contest this year was “My Dream Planet.” One Best APRSAF Poster Award, two Special APRSAF Poster Awards, a DOST Award, and a JAXA Award were conferred on the winners from among 34 posters from 12 countries.

Exhibition

Thirteen companies/institutions/organizations exhibited their activities and products at the venue of APRSAF-23. DOST and JAXA were among the exhibitors. The exhibitors and participants interacted with each other to exchange information about their activities.

New Cooperation Session

The New Cooperation Session was started in 2013, and it aims to explore opportunities for further space-related cooperation through the framework of the APRSAF. Eleven presenters from private companies/universities/public agencies made presentations this year. The session was co-chaired by Dr. Gay Jane Perez from the Institute of Environmental Science and Meteorology, University of the Philippines Diliman, and Mr. Masanobu Tsuji from JAXA.

Side Events:

The following three side events related to the goals and objectives of APRSAF were conducted by the participating organizations:

- The 3rd Asia-Pacific Space Generation Workshop (AP-SGW2016) organized by Space Generation Advisory Council (SGAC)
- International Workshop on “Building Regional Space Policy Cooperation in Asia” organized by the University of Tokyo Policy Alternatives Research Institute (PARI) and co-organized by the National Institute of Advanced Studies (NIAS)
- Innovative Space Enterprise & Space Gen Leadership Mentoring co-organized by JAXA, DOST, and the U.S. Department of State (DOS).
Interview with Dr. Joel Joseph S. Marciano Jr.

Program Leader of the PHL-MICROSAT
Acting Director, Advanced Science and Technology Institute (ASTI)
Department of Science and Technology (DOST)
Space Technology Working Group Co-Chair

DIWATA-1, the first PHILIPPINE-MADE SATELLITE, WAS SUCCESSFULLY DEPLOYED FROM THE "KIBO" IN INTERNATIONAL SPACE STATION (ISS) ON APRIL 27, 2016.

Would you tell me how The Philippines Microsatellite Project started in 2014?
In 2013, the Philippines was hit by a super typhoon “Haiyan” which prompted the Philippines Government to start thinking more about a way of sustaining capability in remote sensing and having on-demand access to information from satellites. I think the decision was made by the DOST to try and vigorously pursue our space technology development, particularly in the area of small satellites.

Prior to this, Professor Yukihiro Takahashi of Hokkaido University had been pitching the idea and had visited the Philippines a few times. In February 2014, we were invited to Hokkaido University and there were substantive discussions on microsatellite development. After that, when we came back to the Philippines, we learned enough about it to write the proposal. So I led a team in writing the proposal, which we submitted to the DOST for funding, and it officially started in January 2015.

The participation of young engineers or students from the Philippines involved in the building satellite is unique. Well, it may seem unique, but actually it’s an approach that has been taken by Japanese universities when engaging with other countries in the ASEAN; for example, in Vietnam and I guess even in Indonesia, the idea is to get young people from these countries to learn about this technology in Japan. In order to do so, they are enrolled as graduate students.

The same idea was proposed to the Philippines by Japanese professors. I guess it is a good idea because we have to rely on our young people to be future leaders. We are not really considering sending mature engineers, or very old engineers, to build these things and to learn about these things. We were relying on the younger generation. They are very eager to learn and, of course, they will receive their master’s and advanced degrees.

So, in that sense, is this project kind of a nice example or a success story among APRSAF community?
I think, yes, there are successes. Of course, there are challenges, several lessons learned certainly. The Philippines is truly new in terms of space technology. So, you have probably heard the expression “learning curve”. Thankfully, because of Japan’s experience working with other countries before the Philippines, the steep slope of this learning curve has been less steep. Many innovations are taking place: space heritage is continually being built every time a rocket is launched and a satellite is deployed. There are many lessons being shared within the space community. I think the Philippines is really taking advantage of this opportunity to learn from other countries and to try to make the most of the investment in space technology.

There has been a relatively mature community in space applications and particularly in remote sensing. There is a vibrant community using images and products on space. However, in terms of the space technology, components, and the actual hardware- and software-embedded systems that go into these small satellites, the initial effort has been made by the Philippines. So yes, it is a combination: new in some things and then you use your experience in other things.

I think the Philippines is realizing also that there is a need, as I mentioned, to build capacity, which will sustain this effort. So, it is not just about acquiring capability but also putting in place the elements in the Philippines, starting with the universities and the academy, which will help promote these efforts in the future. I think the government has been supportive, they are even pushing for the creation of a space agency. I think the project is getting some support from the legislators.

Hopefully, it will be sustained. In the future, apart from addressing the Disaster Risk Management concerns of the country, it can also translate to downstream benefits for industry. Some new industries will be created or current industries will be better equipped to deal with these new markets in space technology.
After 10 years, the APRSAF will be convened again in Bengaluru, this time for its 24th session during November 14-17, 2017. The focal theme is “Space Technology for Enhanced Governance and Development”, which has been aptly chosen for further maximizing the space technology-enabled inputs for decision making by government.

APRSAF started in 1993, and there has been a sea of change in the global scenario since then. As the world prepares itself for facing the challenges of coping up with increasing demands on available resources to provide improved quality of life to an increasing population, issues of food security & energy security is of concern while addressing factors of environment and climate change. Further, the current global economic situation is forcing optimised expenditure on space based activities. Information and communications technologies are also going through rapid changes for effectively utilizing the large amount of space infrastructure and data that the Asia-Pacific agencies have put up. However, APRSAF has remained relevant and responsive to the demands of earth observation of the region in these years.

The completion of 23 sessions and more than two decades of existence brings with it a rich past that also beckons us to look back and see how we have performed and addressed ways of improving overall output as an organization. I am happy to see the growth in a number of member countries as well as the number of participants has doubled since the last time APRSAF was organized in India in 2007. This further proves the importance of this regional forum.

EO Observation needs and the changing economic situation calls for greater coordination amongst regional space agencies to ensure the efficient use of space infrastructure. Asia-Pacific space agencies have committed themselves to leadership roles in the development and operations of the space segment to serve the region. A large part of APRSAF contributions are made through its four Working Groups. ISRO is also geared up with 16 EO satellites, 13 communications satellites, Navigation with Indian Constellation (NavIC), and data sharing platforms to support the regional initiatives under APRSAF.

I am also happy to inform you that the 38th Asian Conference of Remote Sensing (ACRS) will be organized in India in 2017, which is another major event for this region.

I look forward to your active cooperation for making 2017 a fruitful year for APRSAF and welcome all participants to Bengaluru.