



16TH
APRSAF

Asia-Pacific Regional
Space Agency Forum

25 November, 2009

SECOND ANNOUNCEMENT

The 16th Session of the Asia-Pacific Regional Space Agency Forum **(APRSAF-16)**

“Space Applications: Contributions towards Human Safety and Security”

26-29 January 2010, Bangkok, Thailand

Dear Sir/Madam,

Following the first announcement of APRSAF-16, which was distributed to its members in September 2009, we, the APRSAF Secretariat, are pleased to send you the Second Announcement, as enclosed.

On behalf of the APRSAF-16 organizers and on our own behalf, it is our great pleasure to invite you to personally join us to the APRSAF-16 to share your valuable thought and keen insights. We also take this opportunity to request for a good participation to APRSAF-16(including WG) from your entity as well.

It would be highly appreciated if the on-line registration, which is stated at our website, <https://www.prime-pco.com/aprsaf16/registration.html>, is duly completed no later than January 6, 2010.

The further information on the final program etc. will be sent to you in due course as the final announcement.

Also we are constantly updating APRSAF-16 information in our APRSAF website. Please visit http://www.aprsaf.org/text/ap16_info.html at your convenience:

We look forward to meeting you in Bangkok.

With warmest regards,

APRSAF Secretariat

On behalf of the co-host organizations,



S. Chotipanich

Dr. Suchinda Chotipanich
Permanent Secretary
Ministry of Science and Technology



D. Dowreang

Dr. Darasri Dowreang
Acting Director
Geo-Informatics and Space Technology Development Agency



Koichi Morimoto

Koichi Morimoto
Deputy Director-General
Research and Development Bureau
Ministry of Education, Culture, Sports, Science and Technology



K. Tachikawa

Keiji Tachikawa
President
Japan Aerospace Exploration Agency

The 16th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-16)

“Space Applications: Contributions towards Human Safety and Security”

26-29 January 2010, Bangkok, Thailand

You are invited to register for the 16th Session of the Asia-Pacific Regional Space Agency Forum (APRSAF-16), to be jointly organized and co-sponsored by the Ministry of Science and Technology (MOST) of Thailand, the Geo-Informatics and Space Technology Development Agency (GISTDA), the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan and the Japan Aerospace Exploration Agency (JAXA). We also take this opportunity to request for participation to APRSAF-16 (including each WGs) from your entity as well.

Details of APRSAF-16 are provided below.

We look forward to seeing you in Bangkok.

Background

The Asia-Pacific Regional Space Agency Forum (APRSAF) was established in 1993 in response to the declaration adopted at the Asia Pacific International Space Year Conference (APIC) held in 1992, to enhance the development of each country's space program and to exchange views toward future cooperation in space activities in the Asia-Pacific region. The APRSAF has held fifteen annual meetings organized jointly by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan, Japan Aerospace Exploration Agency (JAXA) and co-host organizations of countries participating in the APRSAF, to discuss current space-related issues and possible cooperation among countries mainly in the region. The co-host countries have been Mongolia, Malaysia, Korea, Thailand, Australia, Indonesia, India and Vietnam. APRSAF features to promote concrete regional cooperation on space-related matters through open and voluntary participation. To reflect a broad range of views and voices, the APRSAF intends to ensure wider participation of space agencies, government entities, regional and international organizations and institutions responsible for space applications.

The 15th Session of the APRSAF (APRSAF-15) was convened under the main theme of “Space for Sustainable Development” with the aim to strengthen and enable the countries of the Asia-Pacific region to improve the quality of life of their people through enhanced use of space-based systems, activities and services. It was jointly organized by the Ministry of Science and Technology (MOST) of Vietnam, the Vietnam Academy of Science and Technology (VAST), MEXT and JAXA. The APRSAF-15 gathered more than 200 participants from 20 countries and 6 regional and international organizations. As the results of the discussions at the Plenary session and the four working groups (Earth Observation (EO), Communication Satellite Applications (CSA), Space Environment Utilization (SEU) and Space Education and Awareness (SEA)), the APRSAF-15 adopted the recommendations as shown in Appendix-A.

Objectives

While the APRSAF has been an active forum to promote concrete cooperative activities to resolve common problems at the regional level, the APRSAF-16 will be held under the main theme of “Space Applications: Contributions towards Human Safety and Security” with the aim to contribute toward solving problems not only of the Asia-Pacific region but also of the entire world as well as to exploit space technology developed and utilization for sustainable development of countries in the Asia-Pacific region.

Plenary and Working Groups

The Plenary session will take place in the third and fourth days of the APRSAF-16. In addition to the Plenary session, it is proposed to have parallel sessions of four working groups (WGs): Earth Observation (EO) WG, Communication Satellite Applications (CSA) WG, Space Education and Awareness (SEA) WG and Space Environment Utilization (SEU) WG in the first and second days of the APRSAF-16. The concept papers of each working group are provided as Appendix-B.

At the Plenary session, a status report of the Sentinel Asia Project, SAFE (Space Applications For Environment), STAR (Satellite Technology for the Asia-Pacific Region) and GNSS (Global Navigation Satellite System) workshop will be presented.

Sentinel Asia, which was initiated as the first step to build a disaster risk management system in the Asia-Pacific region since the APRSAF-12, and now that entered into STEP2 Project.

SAFE was recommended in APRSAF-15 in 2008 as a platform for development of solution-oriented prototype systems for environmental monitoring, in particular to assess regional impacts of climate change. Its basic concept for future prototype activities is contributing to GEOSS.

STAR program was proposed in the APRSAF-14 as a new international cooperation scheme on small satellite development. The objective of this cooperation is to provide opportunities of capacity building on satellite development for space agency staffs in Asia-Pacific countries, to increase the number of available Earth observation satellites in this region and meet the needs of Earth observation in the future.

Additionally, the result of the GNSS workshop, which will be held in January 25-26, 2010 at the same venue of APRSAF-16, Sofitel Centara Grand Bangkok, will be presented.

Expected Attendance

Senior officials of relevant Ministries as well as heads and other representatives of space agencies, remote sensing agencies, and interested institutions from government, academy and industries including private sectors are very much welcome to participate in the APRSAF-16.

**Participants from Thailand are recommended to contact the Point of Contact of the GISTDA mentioned below to obtain more detailed information for participation.*

Tentative Program

Please see Appendix-C.

Date and Location

Date: 26 to 29 January 2010

Venue: Sofitel Centara Grand Bangkok

Address: 1695 Phaholyothin Road , Chatuchak, 10900 Bangkok, Thailand

Tel: +66-2-541-1234

Fax: +66-2-541-1087

<http://www.sofitel.com/gb/hotel-3432-sofitel-centara-grand-bangkok/index.shtml>

Registration

Please visit the on-line registration site and complete your registration no later than **January 6, 2010**.

<https://www.prime-pco.com/aprsaf16/registration.html>

Please note that you are responsible for your own travel and accommodation expenses.

Accommodation

We have the special conference accommodation rate at Sofitel Centara Grand Bangkok.

The following room rate is only available using the reservation form in the online registration page

(<https://www.prime-pco.com/aprsaf16/registration.html>).

Single Room : THB 4,400 (inclusive breakfast, service charge and VAT)

Twin Room : THB 4,700 (inclusive breakfast, service charge and VAT)

*Please kindly note that there are limited rooms available. Rooms will be provided on an availability basis.

*All participant bookings are required to be guaranteed by a major credit card.

*Cancellation charge by Sofitel Centara Grand Bangkok will be required 14 days before the arrival date booked.

Points of Contact

■ For Participants from Thailand:

If you have any inquires concerning the APRSAF-16, please feel free to contact:

Ms. Raksina Lekthanoo, Administrative Officer, International Relations

The Government Complex, Bldg B, 6-7th Floor

120 Moo 3, Chaeng Wattana Rd., Laksi, Bangkok 10120

TEL: +66-2-141-4502, FAX:+66-2-143-9603, E-mail: raksina@gistda.or.th

■ For Participants from the countries except Thailand:

If you have any inquires concerning the APRSAF-16, please feel free to contact:

Ms. Yukiko Okabe, APRSAF Secretariat

Manunouchi Kitaguchi building,

1-6-5 Marunouchi, Chiyoda-ku, Tokyo, 100-8260, JAPAN

TEL:+81-50-3362-5880, FAX:+81-3-6266-6908 or E-mail: aprsaf16@aprsaf.org

Technical /Cultural Tour

On the afternoon of January 29, Technical/Cultural Tour will be hosted by GISTDA, Thailand. Please select one course from the following five courses with online registration. Minimum passenger count: 10 persons for each tour.

■ **Technical Tour**

- Course 1: Thailand Ground Receiving Station at Lad Krabang, Bangkok.
- Course 2: THAIKOM Teleport and DTH Center at Ladlumkaew, Pathumthani Province.

■ **Cultural Tour**

- Course 3: The Temple of the Emerald Buddha and the Grand Palace, the must see places for tourist visiting Thailand.
- Course 4: The Vimanmek Mansion, the world's largest golden teakwood mansion.
- Course 5: The Suan Pakkad Palace, the place for experiencing Thai arts and architecture.

Evening reception

All participants will be invited to the following evening receptions:

Evening on January 27, the reception will be hosted by MEXT of Japan.

Evening on January 28, the reception will be hosted by GISTDA of Thailand.

Transportation

The transportation between Bangkok International Suvarnabhumi Airport and Sofitel Centara Grand Bangkok will be provided. Information on the transportation will be provided in APRSAF-16 website and final announcement in due course.

Visa

Please refer to the website of the Ministry of Foreign Affairs (<http://www.mfa.go.th/web/2637.php>).

In case any participant needs invitation letter in order to obtain the visa, please contact raksina@gistda.or.th at earliest.

Insurance

Participants are highly recommended to arrange their own overseas travel insurance. The APRSAF-16 Secretariat does not take any responsibility for your travel accident.

Others

For up-to-date information for APRSAF-16, please visit <http://www.aprsaf.org> .

Final announcement will be provided in due course.

APRSAF-16 Side Event

■ **Asia-Oceania Regional Workshop on GNSS**

Date: January 25 to 26, 2010

Venue: Sofitel Centara Grand Bangkok

Address: 1695 Phaholyothin Road , Chatuchak, 10900 Bangkok, Thailand

Tel: +66-2541-1234 Fax: +66-2-541 1087

<http://www.sofitel.com/gb/hotel-3432-sofitel-centara-grand-bangkok/index.shtml>

*Further detailed information will be released in due course <http://www.multignss.asia/>

*Please contact for further information at [Email: IS-QZSS@jaxa.jp](mailto:IS-QZSS@jaxa.jp)

Contact for further information

Mr. Satoshi Kogure, JAXA QZSS project team

Tel: +81-29-868-5511 Fax: +81-29-868-5975

[Email: IS-QZSS@jaxa.jp](mailto:IS-QZSS@jaxa.jp)

■ **APRSAF-16 Poster Contest**

Theme: "Our Universe - Great Discoveries"

Co-organizers: GISTDA and JAXA

Date: During the sessions of APRSAF-16

Venue: Sofitel Centara Grand Bangkok

Address: 1695 Phaholyothin Road , Chatuchak, 10900 Bangkok, Thailand

Tel: +66-2541-1234 Fax: +66-2-541 1087

<http://www.sofitel.com/gb/hotel-3432-sofitel-centara-grand-bangkok/index.shtml>

Reference: http://www.aprsaf.org/data/aprsaf16_data/PC-A&R_Version-17Jun09_.pdf

■ **APRSAF-16 Water Rocket Event**

Local Organizer: National Science Museum (NSM) of Thailand

Co-organizer: JAXA

Date: January 23 to 24, 2010

Venue: NSM, Bangkok, Thailand

Reference: http://www.aprsaf.org/data/aprsaf16_data/Water_Rocket_Event-Outline_FINAL.pdf

Contact for further information (Poster contest & Water Rocket Event)

Ms. Emiko Ando, JAXA Space Education Center

Tel: +81-42-759-8752 Fax: +81-42-759-8612

[Email: aprsaf-16@edu.jaxa.jp](mailto:aprsaf-16@edu.jaxa.jp)

**Recommendations of the fifteenth session of
The Asia-Pacific Regional Space Agency Forum (APRSAF-15)
"Space for Sustainable Development"
9-12 December 2008
Hanoi and Ha Long Bay, Vietnam**

Recognizing that the use of space technology and its applications substantively contribute to sustainable development, by improving the quality of life and bringing other benefits to humanity in the Asia-Pacific region,

Recognizing the importance of regional cooperation to cope with disaster risk reduction, climate change adaptation, capacity building and other regional issues,

Hereby affirm that we, the participants of APRSAF-15,

[Sentinel Asia]

1. Confirm with satisfaction that STEP2 JPT with JAXA as its secretariat has been successfully evolving its activities such as an increase in the number of participating satellites, and the provision of higher value added data, and utilizing WINDS "KIZUNA";
2. Welcome that in addition to JAXA and ISRO of STEP1, KARI and GISTDA have decided to provide EO data for STEP2;
3. Look forward to further utilization of Sentinel Asia;

[APRSAF Satellite]

4. Agree on the name of APRSAF satellite cooperation as "Satellite Technology for the Asia-Pacific Region (STAR) Program";
5. Welcome the start of an international project team of the STAR program consisting of JAXA and other participating agencies at JAXA Sagami-hara campus, starting from April 2009;
6. Encourage the organizations concerned to provide launch opportunities for the Micro-STAR satellite, operation resources of ground stations, and necessary instruments;

[Earth Observation/SAFE]

7. Recommend that Space Application for Environment (SAFE) as a platform for development of solution-oriented prototype systems for environmental monitoring, in particular to assess regional impacts of climate change;
8. Appreciate the early success of SAFE prototyping (Land use monitoring and water resource management) in Vietnam, and recommend to extend to other countries and other themes;
9. Agree on the SAFE basic concept for future prototype activities contributing to GEOSS;

10. Encourage more participation from the science community as well as the private sector affiliates to support space agency initiatives;

11. Agree to hold the first SAFE workshop in Pattaya, Thailand in May 2009, hosted by GISTDA;

[Communication satellite applications]

12. Agree to further promote the Asia-Pacific regional cooperation through the Communication Satellite Applications Working Group (CSA WG) by sharing the experiences and working on the creation of the new application for tele-education, tele-medicine and disaster management, which are expected as suitable applications of the satellite communication;

13. Pursue to cooperate in the field of the Global Navigation Satellite System (GNSS) in the Asia-Pacific region, and organize a workshop to discuss the future possibility of the joint development and experiments of GNSS applications in the region;

[Space education and awareness]

14. Call upon all countries that participate in APRSAF to support the efforts made and activities undertaken through APRSAF to enhance the understanding among young people at all education levels and school teachers of space science and technology and their applications as well as their links with our lives;

15. Agree that the regional space education efforts undertaken by APRSAF should continue to expand to include various activities and to contribute to global initiatives undertaken in areas relating to space education and awareness increase, such as the celebration of the World Space Week each year and the International Year of Astronomy, in 2009;

16. Agree that it is important to promote inter-regional cooperation with other regions such as Latin America and Africa by, among other things, sharing concrete examples of the successful, joint regional initiatives undertaken by APRSAF in the area of space education;

[Space Environment Utilization]

17. Appreciate the realized opportunity to utilize the Japanese Experiment Module (JEM) "KIBO" and confirm to promote concrete activities towards the joint utilization, continue to share and update information multilaterally on space environment utilization status, and to seek promising areas of steady and productive cooperation among Asia-Pacific countries such as parabolic flight experiments and ISRO's capsule recovery experiment;

18. Encourage to further promote bilateral cooperation activities clarified through APRSAF initiatives;

[UNCOPUOS]

19. Wish that the outcomes of the APRSAF-15 will be presented by the Chairman of UNCOPUOS at the meetings of the UNCOPUOS as well as its Scientific and Technical Subcommittee at their meetings in 2009.

20. Recommend the Chairman of UNCOPUOS presents the outcomes of APRSAF-15 as regional cooperative structures to other region such as Latin America and Africa in order to promote inter-regional cooperation as mandated by UN General Assembly.

***Sixteenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-16)
EO(Earth Observation)WG activities
Proposed Outline***

1. The Scope/Objectives

The EOWG has been exploring opportunities to expand the potential use of EO satellite data for disaster applications (Sentinel Asia) and the environment (SAFE: Space Applications for Environment). The upcoming EOWG will focus on monitoring the progress of SAFE, and stimulating discussion to start up new activities that respond to a wider spectrum of user requirements.

1) SAFE Progress Report

The SAFE general secretariat will report on current SAFE updates; in particular, ongoing SAFE prototyping activities, and will ask participants of the EOWG to approve new candidates.

2) Country Reports

In this session, participating countries and international organizations are kindly invited to contribute Country Reports. The co-chairs expect the presenters to report EO activities for each country (or organization) related to the APRSAF. Of course, we welcome the presenters to include proposals for new activities in the report.

**Please understand that we cannot provide time slots for all member countries because of the schedule. The co-chairs will lead the arrangements with the APRSAF secretariat.*

3) Potential of New Subjects: Private Sector Initiatives

This is a session for participants from private sectors. The co-chairs expect the presenters to explain how their business field is related to EO, as well, to show how they may contribute to the APRSAF as private sectors.

**Please understand that we cannot provide time slots for all participating companies because of the schedule. The co-chairs will lead the arrangements with the APRSAF secretariat.*

2. The Results of EOWG Activities at APRSAF-15

See attached: APRSAF-15 adopted recommendations.

3. The Draft of the Agenda

- 1) Opening of the Session
- 2) Adoption of the Agenda
- 3) Self-introductions
- 4) Review of the Last EOWG in Hanoi, Vietnam
- 5) Focus of EOWG
- 6) Keynote Speeches
- 7) SAFE Progress Report
- 8) Country Reports
- 9) Potential of New Subjects: Private Sector Initiatives
- 10) Overall Discussions and the Way Forward
- 11) Conclusions of EOWG and Wrap-up

4. Expected Outputs

- 1) Confirm progress of SAFE
- 2) Approval of proposed SAFE prototypes
- 3) Confirm further application opportunities
- 4) Confirm the role of the private sector in EOWG

*Sixteenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-16)*

*SEA (Space Education and Awareness) WG Activities
Proposed Outline*

1. Background and objectives

Space has been an important part of human civilization. Throughout the human history, the quest for knowledge of the universe has led humankind to learn more about where they have come from, where they stand and to expand their imagination about where they are going.

Permeating many aspects of human activities today, space has increasingly become an essential, integral part of our daily lives. Benefits derived from space applications have transformed the way we look at our environment and our planet, the way we communicate and interact with each other and the way we move from one place to another, dramatically increasing the safety, security, accuracy, predictability and convenience in our daily conduct.

In spite of the growing evidences of the usefulness of space science and technology for the society, the appreciation by the general public of their importance is still limited. Efforts should continue to increase public awareness of the usefulness and importance of space science and technology and their applications to enhance the quality of our lives and to support sustainable development of our society.

For young people, space activities provide more than useful tools and information. They serve as the source of interest, imagination and inspiration. Attractive space materials can be effectively used to spark intellectual flame in the minds of young people not only in science and technology but also in many other aspects of human activities. Effectively used, examples of the past achievements and efforts to overcome challenges in the use and exploration of outer space can motivate young people to pursue excellence in whatever they do and help them understand how important, and how rewarding, it is to work together with many others to serve the society.

It is with such conviction that the Space Education and Awareness Working Group was established at the 8th session of APRSAF, in July 2001, with the aim of: i) effectively using space materials to enhance education for young people; ii) providing education and training opportunities for young people in space science and technology; iii) contributing to enhancing mutual understanding among countries in the region through exchange opportunities

for young people; and iv) increasing public awareness of the societal benefits and importance of space activities.

2. Achievements and on-going initiatives

The Working Group has organized the following activities since 2004.

<Water Rocket Event for young people>

The Working Group has organized the Water Rocket Event each year since 2005, immediately following the APRSAF session. Attended by 20 – 30 students from about 10 countries, selected through national competitions, the Water Rocket Event has provided opportunities for young people between 12 and 16 years old not only to learn about basics of rocket science and turn their knowledge into practice, but also to learn about other countries and their cultures and to build lasting friendship beyond national borders based on common interest. The next Event is planned to be held in Bangkok, Thailand, from 23 to 24 January 2010, immediately preceding APRSAF-16.

<Poster Contest for young people>

The Working Group has organized the Poster Contest under a selected theme each year since 2006, during the APRSAF session, for children between 8 and 11 years old. From among those posters submitted by the participating countries, the participants of the APRSAF session vote to select the best poster, for APRSAF Best Poster Award, and the second and third best posters for APRSAF Special Poster Award. To contribute to the celebration of the International Year of Astronomy (IYA) in 2009, the Working Group produced a calendar for 2009 using the posters submitted for the last Contest, held under “Wonders of the Universe”. The theme for the next Poster Contest is “Our Universe – Great Discoveries”, which was selected in view of the IYA.

<Space Education Seminars / Forums for teachers and students>

Recognising the need for providing opportunities for primary and secondary school teachers and students particularly in developing countries to enhance their understanding of space science and technology and their applications and to participate in hands-on in education activities, the Working Group has convened space education forums and seminars in Vietnam and Indonesia in 2006. The last seminar has been just held in Sri Lanka in September 2009 for about 50 teachers.

<Water Rocket Education for educators>

In order to expand the pool of skilled and knowledgeable educators who can effectively use water rockets to enhance education for young people and to establish a network of such educators, the International Water Rocket

Education Workshop was held in Melbourne, Australia, in July 2008. Educators and space experts from 12 countries in the region as well as Latin America participated. As a result, an Internet-based Wiki site was established to serve as an on-line forum for anyone interested to exchange information and education materials relating to water rockets.

(See Wiki site:

<http://wiki.vssec.vic.edu.au/waterrockets/moin.cgi/FrontPage>).

<CanSat for university and graduate students>

The Working Group has agreed that CanSat activities could be promoted for university and graduate students and encouraged its members to participate in the International CanSat Workshop co-organized by Japan Aerospace Exploration Agency (JAXA) and University Space Engineering Consortium (UNISEC), in Tokyo, Japan, in February 2007. As a follow-up to this Workshop, the Working Group aims to organize an international meeting in the near future to exchange information and experiences in teaching how to develop CanSats and conduct their experiments as well as promoting CanSat activities among secondary school and university students.

3. List of discussion items¹

- 1) General exchange of views on space education and awareness increase
- 2) Joint educational activities for primary and secondary school students and teachers
 - a) Water rocket activities
 - b) Poster contest
 - c) Space education forum and seminar
 - d) Educational activities for the celebration of the International Year of Astronomy in 2009
 - e) Effective uses of satellite images for schools
 - f) Any other activities
- 3) Joint educational initiatives for university and graduate students and young professionals
- 4) Ways and means to promote collaborations among space scientists and engineers and educators to expand space education activities for young people
- 5) Ways and means to effectively exchange space education materials

¹ For more details of the work to be conducted during APRSAF-16, please refer to "Provisional Agenda" of the Working Group (document APRSAF/SEA-WG/2009/1) to be issued.

6) New and innovative funding sources to support space education activities

7) Other matters

- a) Review of the outcomes of the work of the Working Group and possibilities of revising its terms of reference and developing a plan of action
- b) Other matters

4. Objectives to be achieved at APRSAF-16

- Increase the number of countries in the region and international organizations that carry out or support activities that use space materials to enhance the quality of education for young people and that contribute to the enhancement of human development at individual level;
- Increase the availability of teaching and learning materials in various languages spoken in the region to enhance space education;
- Increase training opportunities for teachers and instructors to acquire knowledge and skills to carry out space education activities for young people and establish and strengthen a mechanism to support those teachers and instructors;
- Ensure that the educational initiatives undertaken through APRSAF contribute to achieving the goals identified at the global level in the area of education and to the relevant global initiatives of entities of the United Nations system and other international organizations;
- Contribute to enhancing inter-regional cooperation by making it possible for countries outside Asia and the Pacific to benefit from the educational initiatives undertaken by APRSAF.

***Sixteenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-16)
CSA (Communication Satellite Application) WG activities
Proposed Outline***

1. The scope /objectives of CSA WG activities

The CSA WG has been discussing many topics on satellite communication matters and has been providing good opportunities to exchange each country's status report on, in particular, digital divide issues as well as the broadband service in the Asia-Pacific region. The CSA WG should share the experiences for realizing cooperation among countries in the region, regarding applications of satellite communication for tele-education, tele-medicine and disaster management, taking into account the needs to resolve the digital divide in the region.

Based on the previous APRSAF-15 discussion, the outline of the CSA WG in the APRSAF-16 is as follows:

1) New applications or concepts of the satellite communication for tele-education, tele-medicine and disaster management in the Asia-Pacific region

Until the previous meetings, many discussions concerning the digital divide issues have been made and useful information has been exchanged. Some applications were planned, demonstrated and organized to demonstrate in each country. The WINDS satellite communications experiments, which were proposed in the APRSAF, are conducting. The CSA WG should continue these activities under the regional cooperation and aim to promote new applications or concepts of the satellite communication for tele-education, tele-medicine and disaster management in the Asia-Pacific region.

2) Promotion for the activities on the Global Navigation Satellite System (GNSS) in the Asia-Pacific region

The Satellite Positioning, Navigation and Timing (PNT) is one of the important satellite applications and becomes widely used in the Asia-Pacific countries. Some countries study, develop and operate their original satellite positioning systems. The CSA WG agreed to organize the workshop to discuss the possibilities of the GNSS applications in the APRSAF-15. The CSA WG should support this activities.

2. The result of CSA WG activities in APRSAF 15

See attached the APRSAF-15 adapted the recommendations.

3. The Draft of Agenda

- 1) Opening of the session
- 2) Adoption of the agenda
- 3) General introduction and guidance of CSAWG
- 4) Report on the the Multi GNSS Workshop
- 5) Presentations of communications satellite systems and applications
 - a. Communications Satellite Systems
 - b. Current Status in Asia Pacific Region
- 6) Activity reports in the field of tele-education, tele-medicine and disaster management
 - a. Study report
 - b. Country report
 - c. General Discussion
- 7) Other matters
- 8) Closing of the session

4. Expected Outputs

The Asia-Pacific region still has the digital divide and in particular there is an imminent need for applications of tele-education, tele-medicine and disaster management for the rural, remote and islands areas. The communication satellites can play a major role in resolving the digital divide issue. On the other hand, many countries in this region have independent national plans and programmes for their respective countries in these areas of SATCOM and GNSS applications. The CSA WG will contribute to promote the Asia-Pacific regional cooperation by sharing the experiences and the opportunities such as the WINDS satellite experiment and working on the creation of the new application for the digital divide issue. The CSA WG will also support the the sustainable development of GNSS applications in this region.

*Sixteenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-16)
SEU (Space Environment Utilization) WG activities
Proposed Outline*

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

“Space Environment Utilization WG (SEU)”, have discussed ways to facilitate effective joint utilization of the space environment among Asia-Pacific countries since APRSAF-12, and have expanded the scope to general space environment utilization beyond ISS/JEM utilization. Any presentations and proposals from the participants concerning the international cooperation in the field of Space Environment Utilization are welcomed. Especially, reviewing the recent cooperation activities related to SEU WG, topics on lessons & learned, issues to be resolved for further cooperation, and the new proposals from agencies would be appreciated.

2.The result of Space Environment utilization WG activities in APRSAF 15
See attached the APRSAF-15 adapted the recommendations.

3.The Draft of Agenda

1) Status report on each activities following the APRSAF-15 recommendation and actions.

Cooperation on the ISS/JEM utilization feasibility studies

Cooperation on a micro gravity platform of the Space Recovery Experiment capsule (SRE) of ISRO

Report on JEM utilization in the first year (JAXA)

2) Activity reports of Space Environment Utilization

Activities reports from participants

3) Discussions on lessons learned and how to reflect our past experience to the future plans, recommendations

4) New proposals for future international cooperation

4.Expected Outputs

Common understanding on the Space Environment utilization status.

Expected areas of productive cooperation among Asia-pacific countries.

*Sixteenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-16)
Sentinel Asia activities
Proposed Outline*

1. The scope /objectives of Sentinel Asia Initiatives activities

The Sentinel Asia (SA) was established in 2005 as a collaboration between space agencies and disaster management agencies under the APRSAF initiative, applying remote sensing and Web-GIS technology to assist disaster management in the Asia-Pacific region. A step-by-step approach for implementation of this dissemination system was adopted, and SA Step1 (2006-2007) has achieved its overall goals, demonstrating recent advancement in web-mapping technology and the ICT system. At APRSAF-14 held in Bangalore, India, in November, 2007, the recommendation on SA Step2 was adopted, and the new JPT meeting was held in Kobe, Japan, in June, 2008. Thus the Sentinel Asia Step2 (2008-2012) was initiated. Now the Join Project Team (JPT) consists of 54 organizations from 22 countries and nine international organizations.

At APRSAF-16, it will be provided with STEP2 activity report, Confirmation of cooperation with International Initiative such as International Disaster Charter, and Report on the expectation of STEP3.

2. The result of Sentinel Asia Initiative activities in APRSAF 15

See attached the APRSAF-15 adapted the recommendations.

3. The Draft of Agenda

Plenary Agenda as follows:

- | | |
|---|----------------|
| 1) STEP2 activity report (include of expectation for STEP3) | 25 min. |
| 2) Activity report by Asia Disaster Reduction Center (ADRC) | 15 min. |
| 3) Achieved result report on Sentinel Asia | 30 min. |
| 4) Status report on cooperation between Sentinel Asia and
International Activity | 20 min. |
| 5) Confirmation of the sentence recommendation | 10 min. |
| | Total 100 min. |

4. Expected Outputs

- 1) Activities on Sentinel Asia STEP2 have been working out well and steadily advanced since APRSAF15 was held.
To confirm that these activities are useful for disaster support management more than ever.
- 2) To confirm that KARI and GISTDA started to provide images along with JAXA and ISRO, and also JPT adjusted participation from each country, including Islands States.
- 3) To confirm building of cooperation with worldwide activities, such as International Disaster Charter.
- 4) To confirm that utilization of “WINDS” was steadily started to transmit the images with rapidity.
- 5) To confirm expansion of utilization of Sentinel Asia in the future that mainly around emphasizing further cooperation with disaster prevention agencies and so on.

*Sixteenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-16)
SAFE (Space Applications For Environment)
Proposed Outline*

1. The Scope/Objectives

SAFE (Space Applications For Environment) is a voluntary initiative for environmental monitoring, endorsed at the last APRSAF-15.

This session aims to report the current activities of SAFE, including the discussion of the EOWG.

1) SAFE Progress Report

The SAFE general secretariat will report on current SAFE updates, mainly, the events, the first SAFE workshop in Pattaya, Thailand (May 2009), and the SAFE mini-workshop at Jakarta, Indonesia (August 2009).

2) SAFE Prototype Activities

In this session, SAFE members will report on the status of SAFE prototype activities in various phases. Some of them are finishing their prototyping activities, and others have just started.

3) Announcement of the Second SAFE Workshop

The SAFE general secretariat will announce the next SAFE event, called “the Second SAFE Workshop”.

2. The Draft of the Agenda

- 1) SAFE Progress Report
- 2) SAFE Prototype Activities
 - a. Forest Monitoring (Vietnam)
 - b. Integrated Water Resource Management (Vietnam)
 - c. Water Cycle & Agriculture Monitoring (Cambodia)
 - d. Forest Monitoring (Laos)
 - e. Sea Level Rise on Coastal Zone (Sri Lanka)
 - f. Potential Drought Monitoring (Indonesia)
- 3) Announcement of the Second SAFE Workshop

3. Expected Outputs

- 1) Confirm progress of SAFE
- 2) Confirm the schedule of SAFE

*Sixteenth Session of the Asia-Pacific Regional Space Agency Forum
(APRSAF-16)*

*STAR program activities
Proposed Outline*

1. The scope /objectives of STAR program activities

STAR program is a cooperative project by space agencies in Asia-Pacific region. It was proposed by JAXA in APRSAF-14 and has been started in 2009 at JAXA Sagamihara campus. It has two major objectives.

(STAR: Satellite Technology for the Asia-Pacific Region)

1) To provide the opportunity of capacity building for space agency staffs in Asia-Pacific region

2) To satisfy future Earth Observation needs by increasing the number of satellites in Asia-Pacific region

Space agency staffs in this region can join the STAR program. In addition, they will carry out system study of an Earth Observation satellite, EO-STAR (300-500kg class), development of an Experimental satellite, and Micro-STAR (50-100kg class) in 3 years.

2. The result of STAR program activities in APRSAF 15

See the attached APRSAF-15's adapted recommendations.

3. The Draft of Agenda

1) Progress of EO-STAR system study and Micro-STAR development
(Tsuji, JAXA)

2) Report on the 2nd technical workshop, monthly web meetings
(STAR program member---TBD)

3) Public relations
(STAR program member---TBD)

4) Expectations to STAR program
(Two or three speakers from STAR program participated organizations)

5) Future plan
(STAR program member---TBD)

4. Expected Outputs

1) Encouraging the STAR program team consisted by ANGKASA, GISTDA, ISRO, JAXA, KARI, LAPAN, and VAST staffs to progress the satellite cooperation in STAR program.

2) Expecting the related organizations to dispatch their staffs continuously, and providing supports such as launch opportunity, ground station operation resource, and necessary instrument

Tentative Program

16th Session of the Asia Pacific Regional Space Agency Forum (APRSAF-16)

~ *Main Theme / Space Applications : Contributions towards Human Safety and Security* ~

26-29 January 2010

Sofitel Centara Grand Bangkok, Bangkok, Thailand

as of 9 Dec. 2009

<Day 1> 26 January

[Registration : 09:30-10:00]

[Working Group Session : 10:00-16:00]

	A. Earth Observation W.G	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G	D. Space Environment Utilization W.G.
10:00-11:00	[Co-chairs] Dr. Takashi Moriyama Fellow, Earth Observation Research Center, JAXA Dr. Darasri Dowreang Deputy Executive Director, GISTDA	[Co-chairs] Mr Hiroki Kohhata Senior Engineer, Satellite Applications and Promotion Center, JAXA Dr. Arnon Tubtiang Senior Executive Vice President of Core Network Telephone Organization of Thailand (TOT)	[Co-chairs] Dr. Takashi Kubota Professor, Department of Spacecraft Engineering, JAXA/ISAS Dr.Surachai Rattanasermpong Deputy Executive Director,GISTDA	[Co-Chairs] Mr. Tetsuo Tanaka Director, Space Environment Utilization Center, JAXA Dr. Saran Poshychinda Deputy Director National Astronomical Research Institute of Thailand (NARIT)
11:00-11:15	Break			
11:15-12:30	A. Earth Observation W.G	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G	D. Space Environment Utilization W.G.
12:30-13:30	Lunch : hosted by GISTDA			
13:30-15:00	A. Earth Observation W.G	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G	D. Space Environment Utilization W.G.
15:00-15:15	Break			
15:15-16:00	A. Earth Observation W.G	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G	D. Space Environment Utilization W.G.

Coffee service:11:00-12:00, 15:00-16:00

Tentative Program

16th Session of the Asia Pacific Regional Space Agency Forum (APRSAF-16)

~ *Main Theme / Space Applications : Contributions towards Human Safety and Security* ~

26-29 January 2010

Sofitel Centara Grand Bangkok, Bangkok, Thailand

as of 9 Dec. 2009

<Day 2> 27 January

[Registration : 09:00-09:30]

[Working Group Session : 09:30-16:00]

	A. Earth Observation W.G	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G	D. Space Environment Utilization W.G.
09:30-10:30	[Co-chairs] Dr. Takashi Moriyama Fellow, Earth Observation Research Center, JAXA Dr. Darasri Dowreang Deputy Executive Director, GISTDA	[Co-chairs] Mr Hiroki Kohhata Senior Engineer, Satellite Applications and Promotion Center, JAXA Dr. Arnon Tubtiang Senior Executive Vice President of Core Network Telephone Organization of Thailand (TOT)	[Co-chairs] Dr. Takashi Kubota Professor, Department of Spacecraft Engineering, JAXA/ISAS Dr.Surachai Rattanasermpong Deputy Executive Director,GISTDA	[Co-Chairs] Mr. Tetsuo Tanaka Director, Space Environment Utilization Center, JAXA Dr. Saran Poshychinda Deputy Director National Astronomical Research Institute of Thailand (NARIT)
10:30-10:50	Break			
10:50-12:30	A. Earth Observation W.G	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G	D. Space Environment Utilization W.G.
12:30-13:30	Lunch : hosted by GISTDA			
13:30-14:30	A. Earth Observation W.G	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G	D. Space Environment Utilization W.G.
14:30-14:50	Break			
14:50-16:00	A. Earth Observation W.G	B. Communication Satellite Applications W.G.	C. Space Education & Awareness W.G	D. Space Environment Utilization W.G.
18:30-20:00	Reception : hosted by MEXT/JAPAN			

Coffee service:10:30-11:30, 14:30-15:30

Tentative Program

16th Session of the Asia Pacific Regional Space Agency Forum (APRSAF-16)

~ *Main Theme / Space Applications : Contributions towards Human Safety and Security* ~

26-29 January 2010

Sofitel Centara Grand Bangkok, Bangkok, Thailand

as of 9 Dec. 2009

<Day 3> 28 January

General Co-Chairs

Thailand: Assco. Mr. Sirichai Keinmeesuke, Deputy Permanent Secretary, Ministry of Science and Technology (MOST)

Japan: Prof. Hiroki Matsuo, Chairman, Space Activities Commission (SAC) / MEXT

[Registration : 08:30-09:00]

[Plenary Session : 09:00-12:15]

Time	Title	Speaker
09:00-09:15	Opening remarks	Mr. Sirichai Keinmeesuke Deputy Permanent Secretary, Ministry of Science and Technology (MOST) THAILAND
		Prof. Hiroki Matsuo Chairman, Space Activities Commission (SAC)/ MEXT JAPAN
09:15-09:25	Key note addresses by co-host organizations and a sponsor	Ministry of Science and Technology (MOST) THAILAND
09:25-09:35		Ministry of Education, Culture, Sports, Science and Technology (MEXT) JAPAN
09:35-09:50		Strategic Headquarters for Space Policy JAPAN
09:50-10:05	Summary of APRSAF-15	Vietnam Academy of Science and Technology (VAST) VIETNAM
10:05-10:50	Photo Session & Coffee Break	
10:50-11:05	Country reports	Geo-Informatics and Space Technology Development Agency (GISTDA) THAILAND
11:05-11:20		Dr. Keiji Tachikawa Japan Aerospace Exploration Agency (JAXA) JAPAN
11:20-11:35		Vietnam Academy of Science and Technology (VAST) VIETNAM
11:35-11:50		Indian Space Research Organization (ISRO) INDIA
11:50-12:05		Dr. Ing. Soewarto Hardhienata National Institute of Aeronautics and Space (LAPAN) INDONESIA
12:05-12:20		Dr. Michael Green Australian Government AUSTRALIA
12:20-13:30		Lunch : hosted by GISTDA

Tentative Program

16th Session of the Asia Pacific Regional Space Agency Forum (APRSAF-16)

~ *Main Theme / Space Applications : Contributions towards Human Safety and Security* ~

26-29 January 2010

Sofitel Centara Grand Bangkok, Bangkok, Thailand

as of 9 Dec. 2009

<Day 3> 28 January

[Plenary Session : 13:30-18:00]

Time	Title	Speaker	
13:30-13:45	Country reports	Dr. Talgat Mussabayev National Space Agency (KAZCOSMOS) KAZAKHSTAN	
13:45-14:00		Malaysian National Space Agency (ANGKASA) MALAYSIA	
14:00-14:15		Korea Aerospace Research Institute (KARI) KOREA	
14:15-14:30	Coffee Break		
14:30-18:00	Report Sessions	14:30-16:30	Sentinel Asia :Disaster Management Support System in the Asia-Pacific Region
		16:30-17:15	STAR :Satellite Technology for the Asia-Pacific Region
		17:15-18:00	SAFE :Space Applications For Environment
18:30-20:30	Reception : hosted by GISTDA / THAILAND		

Tentative Program

16th Session of the Asia Pacific Regional Space Agency Forum (APRSAF-16)

~ *Main Theme / Space Applications : Contributions towards Human Safety and Security* ~

26-29 January 2010

Sofitel Centara Grand Bangkok, Bangkok, Thailand

as of 9 Dec. 2009

<Day 4> 29 January

[Closing Plenary : 08:50-12:05]

08:50-09:05	Speeches by international organizations	United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)
09:05-09:20		Mr. Kamaruzzaman Wahid ASEAN Sub-Committee on Space Technology and Application (ASEAN SCOSA)
09:20-09:35		United Nations Committee on the Peaceful Uses of Outer Space (UN COPUOS)
09:35-09:50	Guest speech	National Aeronautics and Space Administration (NASA) USA
09:50-10:05	Summary reports of WGs	Earth Observation WG
10:05-10:20		Communication Satellite Applications WG
10:20-10:35		Space Education & Awareness WG
10:35-10:50		Space Environment Utilization WG
10:50-11:05	Coffee Break	
11:05-11:45	Adoption of Recommendations of APRSAF-16	
11:45-11:55	Announcement of APRSAF-17	Australian Government AUSTRALIA
11:55-12:05	Closing remarks	Mr. Sirichai Keinmeesuke Deputy Permanent Secretary, Ministry of Science and Technology (MOST) THAILAND
		Prof. Hiroki Matsuo Chairman, Space Activities Commission (SAC)/ MEXT JAPAN
PM	Optional tour	Technical tour / Cultural tour