

**Statement of
Sixth Asia/Oceania Meteorological Satellite Users' Conference**

November 12 2015

--Maximizing the benefit of meteorological satellite observations to sustain social-economic development

We, the participants assembled at the Sixth Session of Asia-Oceania Meteorological Satellite Users' Conference (AOMSUC-6) in Tokyo, Japan from 9-13, November, 2015:

Recalling the overwhelming success of the Asia Oceania Meteorological Satellite Users Conferences held so far, with the first conference in Beijing, China in November, 2010, followed by the second in Tokyo, Japan (2011), the third in Jeju Island, Korea (2012), the fourth in Melbourne, Australia (2013), the fifth in Shanghai, China (2014) and the sixth in Tokyo, Japan (2015).

Recalling further that the AOMSUCs provide an excellent forum for members within the Asia/Oceania community to meet and improve their joint efforts in the utilization of satellite data and products for enhanced weather, climate, and disaster mitigation services. The conferences feature high quality oral and poster presentations, as well as panel discussions that address topical issues such as utilization of satellite data in Weather Analysis and Forecasting, Climate and Environmental Monitoring, Numerical Weather Prediction and Disaster Monitoring. The conferences have proven very effective in:

- (1) Promoting the importance of satellite observations and highlighting their utility;
- (2) Advancing satellite remote sensing science by enabling information exchange between scientists from the Asia/Oceania region and focusing on regional issues;
- (3) Providing a means for satellite operators to interact directly with the user community respect to current and future satellite related activities and plans and respond to the requirements of those users; and
- (4) Engaging young scientists entering the field.

Recognizing that the Asia/Oceania is a weather disaster-prone region, particularly affected by tropical cyclones, severe weather events, etc. The super typhoon Haiyan in 2013 was one of the strongest tropical cyclones ever recorded, that devastated portions of Southeast Asia, particularly the Philippines, causing significant casualties and disruption to socio-economic activities in the region. Most observations of the typhoon were taken from space, and satellite

data played an important role in determining Haiyan's position and strength and in forecasting its movement as well as its intensity. The Haiyan case demonstrated importance of satellite data and coordination at global and regional levels including the reception of data and products from meteorological and environmental satellites for meeting future needs.

Recognizing that the Pacific Ocean is surrounded by the Ring of Fire, inducing significant hazards related to volcanic eruptions and ash clouds, with satellite data being one of the primary tools for the monitoring, assessment and prediction of volcanic ash and SO₂ cloud movement and dispersion.

Recognizing that the Global Framework for Climate Services (GFCS), a United Nations led initiative spearheaded by the World Meteorological Organization (WMO) to guide the development and application of science-based climate information and services in support of decision-making particularly noting the vulnerability of the Pacific region and the Island Nations to sea-level rise. Regional Climate Outlook Forums now exist all over the world, including in the Asia-Oceania region. They are providing meteorological expertise to agriculture, food, disaster and health managers that will lead to huge potential socio-economic development benefits. The development of an Architecture for Climate Monitoring from Space needs unprecedented collaboration and support among the Asia/Oceania space agencies and among the users to help ensure that climate records derived from satellite observations will play an important role in the provision of climate services.

Noting the important roles played by the International Conference Steering Committee (ICSC) of the AOMSUCs, composed of both scientists and satellite operators from China (CMA/NSMC), Japan (JMA), Korea (KMA), Russia (Roshydromet) and India (ISRO), as well as from Australia (AuBOM) representing Oceania, and other internationally renowned scientists, together with the sponsoring organizations WMO and Group on Earth Observations (GEO). The ICSC was very successful in helping formulate the roles of the key co-sponsors, in setting up the program of the conferences, in helping to attract strong science participation from across the globe, and in setting the pathway for future conferences.

Noting with appreciation that India (IMD) and Indonesia (BMKG) joined the ICSC and became co-sponsors of the AOMSUC on the occasion of the World Meteorological Congress in 2015.

Noting the expectation of the participants that the AOMSUCs will continue to contribute to building an effective platform and a long-term cooperative mechanism that engages meteorological satellite operators and users in the Asia/Oceania region and in the rest of the world at large, and in this aspect, the participants reached further the following consensus:

1. **Note with satisfaction** that the AOMSUCs have provided a forum that facilitated improved collaboration among the space agencies and with the broader user communities of the Asia/Oceania region, that provided an unique atmosphere where users and satellite operators could communicate positively to address the challenges that ranged from utilization to future satellite systems and requirements, and that attached great importance to the cooperation and exchange of Earth observations from space.
2. **Recommend continuing** the AOMSUCs as an annual satellite user conferences with focus areas that reflect the needs of Asia/Oceania, and with the hosts coming from one of the regional satellite operators and some major users representative countries of the Asia/Oceania region, and to expand invitation to more satellite operators of the region, and to encourage more active participation from all the Asia/Oceania countries to benefit by utilizing the new generation of meteorological satellites.
3. **Recommend further** to retain the current mandate of the International Conference Steering Committee (ICSC) of AOMSUC in line with the opportunities and challenges provided by new generation of meteorological and environmental satellites and new emerging services requirements.
4. **Recommend further** to proceed with an ICSC that is composed of a Chair that is chosen by the ICSC and serves for three years, two Co-chairs, one from the host country and the other from the former host country, preferably the permanent representative of WMO Members, or his/her high level representative, with members composed of high level representatives from satellite operators and major user countries of the region, as well as internationally renowned scientists recommended by the co-sponsors.
5. **Recommend further** to establish a permanent secretariat function to sustain the AOMSUC mechanism by facilitating the organization and coordination of future AOMSUCs, supporting the ICSC meetings, liaising with EUMETSAT and NOAA conference secretariats. Provide support to AOMSUC co-sponsors and others in Asia/Oceania to strengthen existing, and foster the future collaboration on utilization and exploitation of satellite data and help coordinate their activities.
6. **Recommend further** the Permanent Representatives of WMO Members sponsoring and endorsing the AOMSUC to bring this statement and these recommendations to the attention of the WMO Secretary-General with the aim of encouraging Asia/Oceania Members to participate in future AOMSUCs; and, further continue to support AOMSUC related training events and workshops through financial support to ensure participation of people from

developing and least developed countries.

7. **Extend** deep appreciation to all the host countries for graciously hosting the AOMSUCs; and acknowledge and value the contributions of WMO and GEO as the co-sponsoring organizations to the success of the AOMSUCs, and special gratitude to the ICSC Chair and members, as well as the local organization committee members for dedicating their time, efforts and resources to the success of AOMSUCs.

Annex: Terms of Reference of Host, Co-sponsors, ICSC and Secretariat of AOMSUCs

Asia Oceania Meteorological Satellite Users' Conference Structure

Introduction

Meteorological and earth observation satellites provide frequent and extensive observational information for use in disaster prevention and climate monitoring/diagnostics, and are indispensable in today's world. Today satellites have evolved into a powerful space based observing system with China, EUMETSAT, India, Japan, the Republic of Korea, the Russian Federation and the United States providing high quality observations over the Asia/Oceania region. Those satellites are a part of the Global Observing System (GOS) promoted by the World Meteorological Organization (WMO) and contribute to the Global Earth Observing System of Systems.

Beginning in 2010, CMA, JMA, KMA, AuBOM, WMO and GEO joined forces to put on the first Asia/Oceania Meteorological Satellite Users' Conference in Beijing, China. Since that first conference, conferences have been held annually in Japan, Korea, Australia and again in China and Japan in 2014 and 2015. The purpose of these annual conferences was to further enhance the exchange of application techniques among satellite data users in Asia/Oceania, to foster cooperation among satellite operators and users in Asia/Oceania with the goal to improve regional capacity in exploiting satellite data in a cost-effective, collaborative manner, building upon and concentrating existing skills and infrastructure, as well as to advance satellite observation technologies and to promote synergetic development related to meteorological satellites in this region. This conference is the eminent scientific event in the Asia-Pacific for those working in satellite remote sensing with applications in weather forecasting, climatology, oceanography and related fields. Attendees have included world leaders in the field of satellite meteorology, satellite operators and leading scientists from around the world.

Topical areas that have been covered at these conferences include:

- Current and future meteorological satellite programs
- Facilitation of data access and utilisation
- Atmospheric parameters derived from satellite observations
- Application of satellite data to weather analysis and disaster monitoring
- Application of satellite data to numerical weather prediction
- Application of satellite data to climate and environmental monitoring
- Land surface and ocean parameters derived from satellite observations
- Capacity building and training activities

In order to place the conference on a self-perpetuating basis it is necessary to define the roles

and responsibilities of the various parties engaged in formulating the annual AOMSUC. The sections below define the structure of the conference and the roles of the host, co-sponsors, the International Conference Steering Committee (ICSC) and a secretariat. At the end of those sections is a list of those ICSC members present at AOMSUC-6 who approved those structures.

Asia/Oceania Meteorological Satellite Users' Conference Structure

November 12, 2015

The AOMSUC shall be composed of a primary sponsor (that year's host) and co-sponsors (cohost) to include meteorological satellite operators from RA II and RA V, a country or countries representing Asia/Oceania who are not meteorological satellite operators, as well as other organizations with a vested interest – as a whole they are referred to as major sponsors. At the time of this document the major sponsors include satellite operators CMA, ISRO, JMA, KMA and Roshydromet; countries representing Asia/Oceania, AuBOM and BMKG; and the organizations WMO and GEO. An International Conference Steering Committee (ICSC) and a secretariat will support the AOMSUC and associated activities. Responsibilities of the secretariat, host, co-host and ICSC are presented below:

SECRETARIAT

A permanent secretariat function operating under the auspices of the host exists to sustain the AOMSUC mechanism and facilitate the organization and coordination of the AOMSUCs. During the period leading up to and for some time after the AOMSUC, the host will have primary responsibility for assuring the tasks of the secretariat are brought to fruition. This may be accomplished by the host assuming those duties or through secondment or funding to the WMO Space Programme (WMOSP). The secretariat will have a major support role in its interaction with the major sponsors and the ICSC. The secretariat will work in close coordination with the WMOSP, the ICSC through its Chair and Co-chairs, and the host and co-sponsors to ease their workload and ensure requirements are met in a timely fashion. It should further:

- 1) Ensure the smooth transition between one AOMSUC to the next AOMSUC and provide management support during the inter-sessional period;
- 2) Aid in the formulation and distribution of the final report of the AOMSUC;
- 3) Work with the incoming host to select a best possible date for the conference through inspection of other relevant organization's and working group's calendars and list of upcoming events;
- 4) Aid the host in the timely development of the contents of a web site for the upcoming AOMSUC;
- 5) Have primary coordination of responsibilities with appropriate parties for conference associated scientific activities such as user focused training events and workshops of the WMO regional groups for identifying requirements for satellite data;

- 6) Foster the establishment of joint regional satellite research and applications related activities based on recommendations of the conference that further the goals of the AOMSUC;
- 7) Liaise with other major satellite conference secretariats such as EUMETSAT and NOAA conference secretariats, and other major organizations as appropriate.

HOST

The host has primary responsibility for the AOMSUC arrangements spelled out below and co-chairing of the ICSC. The host will have primary responsibility for assuring the tasks of the secretariat are brought to fruition.

- 1) At the final session of the AOMSUC announce the venue and timeframe for the next AOMSUC.
- 2) Within a month of the last AOMSUC begin reformulation of the ICSC by;
 - a. Appointing its co-chair whose term will be two years;
 - b. Appointing one or two scientists from their country to participate on the ICSC;
 - c. In coordination with the ICSC Chair and Co-chairs seek ICSC membership from the global science community.
- 3) Develop a local organizing committee to do the following:
 - a. Handle local arrangements such as venue, hotels, transportation, meals, events, visits, etc.;
 - b. Formulate the initial conference program structure (main topical areas) with support from the secretariat and ICSC Chair and Co-chairs for review by the ICSC. The conference program should reflect strategic and programmatic priorities of the major sponsors;
 - c. Collect and review abstracts and work with the ICSC Chair and Co-Chairs in the formulation of the final conference program.
- 4) With the aid of the secretariat develop the contents of a website for the upcoming AOMSUC;
 - a. the website should contains information such as relevance of the AOMSUC, venue, dates of the AOMSUC, call for abstracts, and other pertinent information;
 - b. the website's posting should be announced to the ICSC Chair as well as AOMSUC co-sponsors
 - c. this website should be updated as appropriate;
- 5) Interact with the secretariat and WMOSP toward the goal of developing a training event to immediately precede, follow or be integrated as part of the AOMSUC;

- 6) As appropriate in the timeframe of the AOMSUC, interact with the secretariat and WMOSP to help organize a workshop of the WMO regional groups for identifying requirements for satellite data (i.e., the Coordinating Group for the WIGOS Project to Develop Support for NMHSs in Satellite Data, Products and Training (in RA II), and the Regional Task Team on Satellite Utilization (in RA V)), to be held in association with the AOMSUC.
- 7) Work with a secretariat to ensure coordination is being carried out in a timely fashion between co-sponsors and other interested parties as well as activities mentioned above.
- 8) To the extent possible support the participation of people from developing and least developed countries in the AOMSUC.
- 9) Functionally carry out all needed arrangements for organizing an AOMSUC and its associated events.

CO-HOST (co-sponsors):

At the end of an AOMSUC, the incoming co-sponsors should proceed with the following activities:

- 1) Within a month appoint a member from their organization to be their representative on the ICSC as well as one or two members from the scientific community from within their country to participate on the ICSC - in the case of international organizations their representative(s) on the ICSC would be representative of their involvement in the AOMSUC;
- 2) Notify the ICSC Chair and incoming host of their appointments to the ICSC;
- 3) Constitute a presence on their website that reflects the information on the upcoming AOMSUC and provide a link to the host's website;
- 4) Support people within their agency and country to participate in the AOMSUC - in the case of international organizations this would be from within their realm of activities and not necessarily from within their organization;
- 5) As possible support the participation of people from developing and least developed countries in the AOMSUC;
- 6) As appropriate participate in the training events and workshops associated with the AOMSUC.

INTERNATIONAL CONFERENCE STEERING COMMITTEE

There will be an International Conference Steering Committee that helps guide the direction

and of the Asia Oceania Meteorological Satellite Users' Conference. Members of the ICSC are expected to be renowned experts in their field and well recognized as such within their country as well as internationally. The ICSC will have a chair person that serves a term of three years. The incoming Chair should be an internationally recognized scientist. He/she will be nominated and appointed by the ICSC at the end of the term of the incumbent Chair. ICSC membership will be by invitation of the major sponsors, with the ICSC Co-chair residing within the host country. The major sponsors are invited to coordinate their appointments to the ICSC with the ICSC Chair and Co-chairs. The ICSC is expected to be fully formed within two months of the end of the previous ICSC.

ICSC members are expected to take a leadership role in the conference by helping formulate the conference agenda and its associated program in conjunction with the appropriate host's local organizing committee. ICSC members are expected to actively support the conference in one or more of the following ways:

- 1) co-chair one of the conference sessions and provide a brief written summary of that session to the ICSC Chair and Co-chairs in a timely manner so that the summary can be included in the conference final report;
- 2) present a lecture during the conference;
- 3) serve as a panel or round table discussion chair, co-chair or member;
- 4) provide closing thoughts in the final session;
- 5) foster attendance by contacting colleagues and encouraging them to participate in the AOMSUC;
- 6) aid in the development of a user focused training event and/or a workshop of the WMO regional groups for identifying requirements for satellite data that are attached to the AOMSUC.
- 7) make consideration for, and a decision on, accepting a new co-sponsor when a new satellite operator, a country to represent Asia/Oceania and an organization asks to be a new co-sponsor.

ICSC Members at 6th AOMSUC

Below are the names of the members of the International Conference Steering Committee (ICSC), with affiliation, that participated in AOMSUC-6 and in the development of the "Statement" and "Roles and Responsibilities" papers; surnames in capital letters and presented in English format (surname last).

James PURDOM (CHAIR of the ICSC)

Paul MENZEL (CIMSS, University of Wisconsin)

Wenjian ZHANG(WMO)
Sang Jin LYU(KMA/NMSC)
Myoung-Hwan AHN (Ewha Womans University)
Caiying WEI (CMA/NSMC)
Jiashen ZHANG (CMA/NSMC)
Liubov S. KRAMAREVA ... (Roshydromet/SRC Planeta)
Kenneth F. CAREY (AMS)
Teruyuki NAKAJIMA (JAXA/EORC)
Toshiyuki KURINO (JMA)
Tatsuya KIMURA (JMA)
Mitch GOLDBERG (NOAA/NESDIS)
Fuzhong WENG(NOAA/NESDIS)
Anthony REA(AuBOM)
Kenneth HOLMLUND (EUMETSAT)