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RA II WIGOS Project Newsletter

DEVELOPING SUPPORT FOR NATIONAL METEOROLOGICAL AND
HYDROLOGICAL SERVICES IN SATELLITE DATA, PRODUCTS AND TRAINING

Contents of this issue

	Page
✧ The seventh Asia/Oceania Meteorological Satellite Conference	1
✧ The fourth Meeting of the Coordinating Group of the WMO Regional Association II (RA II) WIGOS Project to Develop Support for National Meteorological and Hydrological Services(NMHSs) in Satellite Data, Products and Training	3
✧ JMA's Himawari-9 successfully launched	6
✧ Members of the Coordinating Group	8
✧ From the Co-editors	9

The seventh Asia/Oceania Meteorological Satellite Conference

The seventh Asia/Oceania Meteorological Satellite Users' Conference (AOMSUC-7) was held in Songdo City, Republic of Korea from 24-27 October 2016. The conference was hosted and sponsored by Korea, and was co-sponsored by China, Japan, Australian, the Russian Federation, Indonesia, India, the World Meteorological Organization (WMO), and the Group on Earth Observations (GEO). The conference was held in conjunction with the 2nd AMS-Asia Satellite Conference and the 2nd

KMA Meteorological Satellite Users' Conference. A training event was conducted prior to the conference (summarized in the conclusions) that brought together participants from WMO Regions II and V. Over 230 scientists, users, and satellite operators representing 37 countries participated in the AOMSUC-7. All attendees expressed their great appreciation of the outstanding hard work of KMA in its planning and hosting of the conference as well as the support of the co-sponsors and the work of the International Conference Steering Committee (ICSC).



Noting that the move to the next generation of geostationary and polar orbiting meteorological satellites underway and planned for the next few years were leading to a new era in the Space Based Component of the WMO Integrated Global Observing System (WIGOS), the participants welcomed the efforts being undertaken to distribute and utilize this unprecedented stream of very high resolution multispectral digital data (15 or more channels in the visible to near infrared and across the infrared portion of the spectrum); it was agreed that this early coordination in the generation of new products and services and the preparation for their utilization by the Asia/Oceania user community must be actively sustained. This data and product flow is a significant undertaking for the operational space agencies in the coming years, as is the associated user preparation and these annual conferences of the Asia/Oceania satellite community are an important part of that effort. It also points to the potential need for joint satellite applications facilities as is spelled out in the Memorandum on the AOMSUC signed at WMO EC 2016 (immediately below).

This 7th AOMSUC represented an important milestone in the life of the AOMSUC. At WMO Executive Council on the 16th of June 2016 the AOMSUC was recognized on a formal international basis by the Permanent

Representatives to WMO of Australia, China, India, Indonesia, Japan, Korea, the Russian Federation and the Secretary-General of WMO; all confirmed and signed the “Memorandum on the Asia-Oceania Meteorological Satellite Users Conference (AOMSUC)”.

AOMSUC-7 featured high quality presentations in 10 oral sessions, a poster session, and a concluding panel to summarize the highlights. Each of the co-sponsors expressed appreciation of the conference accomplishments and stressed the importance of the AOMSUC. The Russian Federation announced that they are planning to host the 8th AOMSUC on 16-21 October 2017 and invited prospective attendees to Vladivostok (the attendees were advised to apply for visas about 2 months prior to the conference), and Indonesia announced its intentions to host the 9th AOMSUC in a venue to be decided in Indonesia in October of 2018. Dr. James Purdom, Chair of the ICSC, summarized the Memorandum on the AOMSUC that was signed at WMO EC to continue the AOMSUCs, the mechanisms for continuation, and terms of reference of the hosting institute, co-sponsors, the ICSC and the AOMSUC supporting secretariat.

Session 1: Current and Future Meteorological

Satellite Programs

- Session 2: Expectations from the Next Generation Satellites and User's Broad Needs in Asia/Oceania
- Session 3: Preparing the New Generation of Meteorological Satellites
- Session 4: Program Plans, Data Access and Utilization
- Session 5: Atmospheric Parameters Derived from Satellite Observations
- Session 6: Application of Satellite Data to Weather Analysis and Disaster Monitoring
- Session 7: Application of Satellite Data to Data Assimilation and Numerical Weather Prediction (NWP)
- Session 8: Application of Satellite Data Calibration / Validation and Climate / Environmental Monitoring
- Session 9: Land Surface and Ocean Parameters Derived from Satellite Observations
- Session 10: Capacity Building and Training Activities

In conjunction with AOMSUC-7, a two days' training event was hosted by KMA immediately prior to the conference, titled "Capacity Building for Next Generation Meteorological Satellites" at the NMSC in Jincheon from 21-22 October 2016. Including lecturers and NMSC staff and attendees there were around 60 participants to the Training Event. The audience was represented by participants from 27 countries such as Japan, Australia, the United States, China, Indonesia, New Zealand, Micronesia, Papua New Guinea, Solomon Islands, Tuvalu, Nepal, Bhutan, Bangladesh, Malaysia, Myanmar, the Philippines, Vietnam, Hong Kong, Laos, Thailand, the Maldives, Sri Lanka, Timor Leste, Oman, Pakistan, Kyrgyzstan, Uzbekistan. The two days involved a blend of introductory lectures followed up by practical sessions.

AOMSUC-7 was very successful in meeting the four goals of these conferences; (1) to promote the importance of satellite observations and highlight their utility, (2) to advance satellite remote sensing science by

enabling scientist to scientist information exchanges focused on Asia/Oceania, (3) to provide a means for satellite operators to interact directly with the user community concerning current and future satellite related activities and plans, and (4) to engage young people entering into the field. In his closing summary Dr. Purdom noted the exceptionally fine job done by KMA in preparing for and putting together AOMSUC-7. The venue was superb and the hospitality with an ice breaker, welcoming reception, lunches and coffee breaks was greatly appreciated by all. The conference was closed by Dr. Hoon Park, Director General of KMA's National Meteorological Satellite Center. In his closing he thanked the ICSC for its work in helping prepare for the conference and the participants for helping make AOMSUC-7 a great success. He remarked on how the AOMSUC venue was important for both satellite operators and the Asia/Oceania community. He wished everyone a safe trip home.

(Dohyeong Kim, KMA/NMSC)

The fourth Meeting of the Coordinating Group of the WMO Regional Association II (RA II) WIGOS Project to Develop Support for National Meteorological and Hydrological Services (NMHSs) in Satellite Data, Products and Training

The Fourth Meeting of the Coordinating Group of the WMO Regional Association II (Asia) WIGOS Project to develop support for National Meteorological and Hydrological Services (NMHSs) in Satellite Data, Products, and Training was held at Hotel Sheraton in Songdo, Korea on 28 October 2016 in conjunction with the 7th Asia/Oceania Meteorological Satellite Users' Conference. The event was attended by RA II Member representatives and a number of RA V Member observers. The meeting opened with addresses from Jae-Gwang Won on behalf of Dr. Hoon Park, Director-General, National

Meteorological Satellite Center of KMA and Stephan Bojinski (on behalf of WMO), who

both welcomed the attendees and thanked them for coming.



Status of Project

Dr. Dohyeong Kim, one of the co-chairs of the Coordination Group, introduced the accomplishments in the first to fourth phases of RA II Pilot Project (Sep. 2009 – Aug. 2013) and summarized progress of the RA II WIGOS Project since Sep. 2013 for the Quarterly Newsletters, Progress and Plan of the RA II WIGOS Project and Future plan. Ms. Agnes Lane, Australian Bureau of Meteorology (AuBoM), briefed the detailed activities of the RA V Task Team on Satellite Utilization, including a plan for the distribution of a questionnaire to identify user requirements in relation to satellite data. Dr. Stephan Bojinski delivered a presentation on WMO Space Programme Update focused on input to RA II Satellite User Mechanism and Capacity Building. WMO Space Programme is divided into 4 categories (Observations, Products, Data Dissemination and Access and Training and Awareness)

Country Reports

The major part of country report consists of 1) Major historical meteorological disaster events, 2) Top hazardous weather of concern and 3) satellite data collection and processing

capability. Country reports were summarized correspondingly.

On behalf of WMO, Dr. Stephan Bojinski commented that the summary and update of country reports were a good start and will be very useful for WMO. Mr. Riris Adryanto from BMKG suggested to deliver satellite data using wider range of channels and higher resolution of data for optimal utilization of in some countries including Indonesia. BMKG including other developing countries nevertheless face challenges in the use of satellite data given meteorological satellites are now entering into their next generation. Mr. Bodo Zeschke from AuBoM (BMTc) agreed that higher resolution data is very important specially for the tropical region like in the use of convective cloud analysis.

On behalf of Maldives Meteorological Service, Mr. Ali Shareef requested CMA data and Dr. Feng Lu from CMA said that CMA will take user requirements for FY-4. Dr. Feng Lu mentioned that it is required to discuss how to disseminate the observation data in coordination with KMA and JMA, given that the data volumes will be substantially larger than from current satellites. JMA announced that Himawari-8 data is being disseminated

through a commercial telecommunications satellite.

Relevant Training activities in cooperation with RA II and RA V

Dr. Dohyeong Kim stated KMA's training activities since 2007. KMA has participated in WMO VLab program and contributed to the WMO VLab Technical Support Officer through the WMO Trust Fund from 2012. KMA firstly supported Sri Lanka to build ground and data processing system from 2010 to 2012 and provided the training course of H/W system and S/W algorithm from 2011 to 2012. KMA ran the training program of "Analysis of COMS data" from 2007 to 2013 and around 20 people from 11-14 countries participated. KMA established a new training course of "Improvement of Meteorological Satellite Data Analysis and Application Capacity" as three year project starting in 2016. He concluded his presentation introducing the contents of training program, which are Korean Meteorological Satellite Program; COMS data processing and products; Satellite imagery interpretation; Application of GEO and LEO satellite data; KMA's GEO-KOMPSAT-2A satellite; Next generation satellite data processing tools.

Future Strategy of the RA II WIGOS Project

Dr. Dohyeong Kim delivered a presentation on the outcome from Joint RA II/V Workshop on WIGOS for DRR held in Jakarta, Indonesia from 12 to 14 October 2015. He explained that the Joint RA II/V Workshop aimed at enhancing the exchange of observations across Southeast Asia region and to improve the availability and quality of most relevant observations for DRR such as early warning systems for severe weather events. He reviewed the workshop as representatives from 8 RA II and 6 RA V WMO members reported on their national observing networks and participated in the discussions. The major outcome of the workshop was the Jakarta declaration and it proposed to develop 2

WIGOS projects across RA II/V, which were 1) Satellite Data project and 2) Radar Data project.

Dr. Jae-Gwang Won suggested it is important that the RA V satellite activities are coordinated with the RA II WIGOS satellite project. Ms. Agnes Lane pointed out RA V does not have WIGOS project but she agreed that RA V support the collaboration through the RA V Task Team on Satellite Utilization.

Work Plan 2017-2020

Dr. Hiroshi Kunimatsu presented implementation plan (2017-2020) of the WIGOS project. Dr. Jae-Gwang Won suggested that AOMSUC would be included in the work plan since AOMSUC is already WMO program based on Memorandum during WMO-EC in Geneva, June 2016. Mr. Rattenborg suggested that not only geostationary satellite but all earth measurement satellite requirements from RA II/RA V need to be included when identifying Region-based requirements for satellite datasets.

Summary of the Meeting

Dr. Dohyeong Kim presented the action items in the light of the discussion as follows:

- Based on the Survey Results of RA II/RA V Training Event, co-coordinators of RA II WIGOS project and the Chair of the "RA-V Task Team on Satellite Utilization" provide WMO and host country of AOMSUC and training event with the requirement from trainees which can be reflected in the next Conference.
- With regard to Further Study for using multi-GEO-satellites, co-coordinators would conduct the additional cases of typhoon and rapidly developing thunderstorm to investigate the feasibility using multiple GEO satellites (e.g. COMS, Himawari-8, FY-4) for preparation of next generation imagers over Asia-Oceania region.
- Associated with Collaboration of RA II/RA V Training, co-coordinators of the existing "RA II WIGOS Project to Develop Support for

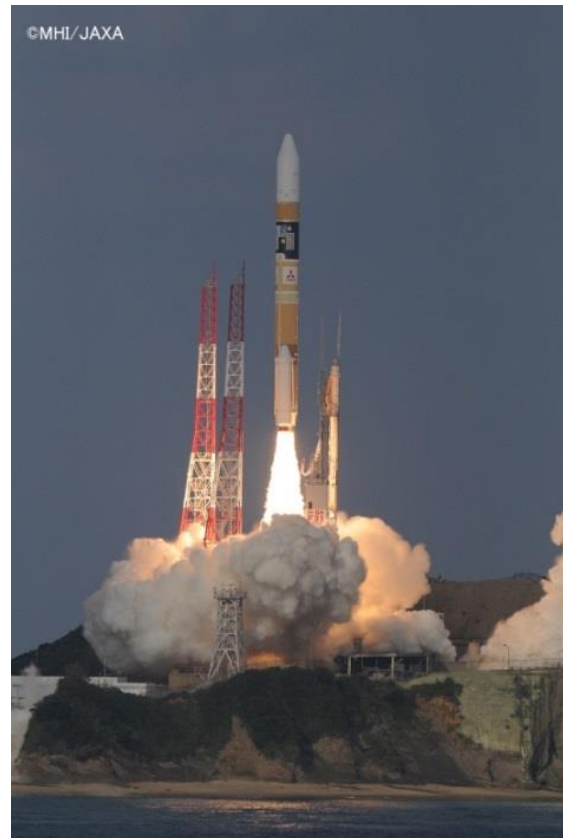
NMHSs in Satellite Data, Products and Training” and the chair of the “RA-V Task Team on Satellite Utilization” will attend at the respective meeting on a reciprocal basis, and collaborate one another for developing the possible integration of two Projects in future.

- With regard to Implementation Plan (2017-2020), the co-coordinators of the “RA II WIGOS Project to Develop Support for NMHSs in Satellite Data, Products and Training” submit the WIGOS Implementation Plan (2017-2020) reflecting feedback from this meeting.
- Development of a protocol for event-driven rapid scanning should be done starting in 2017 within the RA II WIGOS Project, in collaboration with the RA V Task Team on Satellite Utilization, and as a contribution to the WMO SCOPE-Nowcasting initiative

Dr. Stephan Bojinski thanked the co-coordinators, Dr. Dohyeong Kim and Dr. Hiroshi Kunimatsu for organizing the meeting and he also expressed his appreciation to KMA staff for their hard work on organizing the 7th Asia/Oceania Meteorological Satellite Users’ Conference. The 4th Coordinating Group Meeting for Regional Association II (RA II) WIGOS Project to Develop Support for National Meteorological and Hydrological Services (NMHSs) in Satellite Data, Products and Training was closed at 1600 on Friday, 28 October 2016.

(Hyesook Lee, KMA)

JMA’s Himawari-9 successfully launched



The Japan Meteorological Agency (JMA) launched its new Himawari-9 geostationary meteorological satellite, which is identical to the currently operational Himawari-8 unit, on 2 November 2016 from the Tanegashima Space Center of the Japan Aerospace Exploration Agency (JAXA) using H-IIA launch vehicle No. 31 (H-IIA F31). The satellite flew as planned after separating from the rocket and entered geostationary orbit on the scheduled date of 11 November.

In-orbit test will be conducted until March 2017, when Himawari-9 will begin a period of backup to Himawari-8 until the planned switchover in or around 2022. This dual combination of new-generation satellites will support JMA’s stable provision of continuous satellite observation data for the Asia and Pacific regions until 2029 (Figure 1).

JMA will continue its current HimawariCloud and HimawariCast data distribution services for National Meteorological and Hydrological Services (NMHSs) in the Asia and Pacific regions after

the switchover. Users of these services will not need to change their settings to maintain service provision once Himawari-9 begins operation. (Shiro Ohmori, JMA)

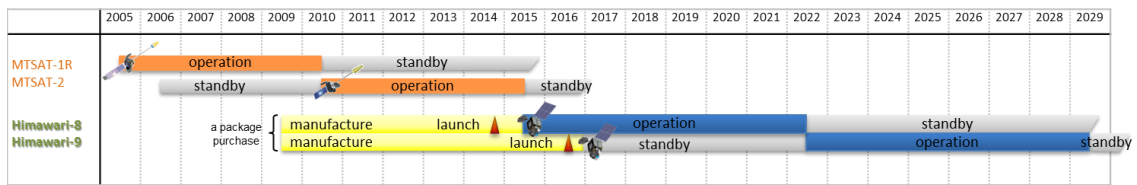


Figure 1 Himawari-8/-9 timeline

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From the Co-editors

The co-editors invite contributions to the newsletter. Although it is assumed that the major contributors for the time being will be satellite operators, we also welcome articles (short contributions of less than a page are fine) from all RA II Members, regardless of whether they are registered with the WMO Secretariat as members of the WIGOS Project Coordinating Group. We look forward to receiving your contributions to the newsletter.

(Dohyeong KIM, KMA, and Hiroshi KUNIMATSU, JMA)

RA II WIGOS Project Home Page

http://www.jma.go.jp/jma/jma-eng/satellite/ra2wigosproject/ra2wigosproject-intro_en_jma.html

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