



Vol. 1 No. 2, April 2010

# RA II Pilot Project Newsletter

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

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## Preface

Since the first issue of RAII Pilot Project Newsletter (Vol 1, No 1) was issued September 2009, the co-coordinators (Toshiyuki Kurino and Jae-Gwang Won) have participated in several meetings, which are related with international cooperation about the meteorological satellite, such as WMO ET-SUP (Expert Team on Satellite Utilization and Products), WMO Virtual Laboratory Management Group, and the 37<sup>th</sup> CGMS (Coordination Group for Meteorological Satellite).

The first reduced session of the Expert Team on Satellite Utilization and Products (ET-SUP-RED-1) was opened on 7<sup>th</sup> October 2009 at WMO Headquarters in Geneva, Switzerland. The co-coordinators of RAII Pilot Projects have joined this meeting via on-line, and briefed the meeting on the status of the Pilot Project. The first phase action plans were introduced at the meeting, and the Expert Team congratulated the kick-off of the project for this timely initiative to meet the regional needs for the meteorological satellite data utilization.



Figure 1. The Participants of 37<sup>th</sup> CGMS meeting at Jeju, Republic of Korea

During 26<sup>th</sup>~ 30<sup>th</sup>, October 2009, the 37<sup>th</sup> CGMS meeting was held in Jeju island, Republic of Korea. JMA and KMA have submitted a joint working paper (JMA-WP-07 & KMA-WP-18) and introduced the RAI Pilot Project at the plenary session. During the discussion WMO informed CGMS that a Project web page located in the Space Programme section would be available in due course, and the WMO VL presented their interest in supporting the RAI PP activities.



Figure 2. The Plenary Session of 37<sup>th</sup> CGMS meeting

After 37<sup>th</sup> CGMS, RA II Pilot Project was introduced the WMO VL members again by the co-coordinators at the web meeting on 18<sup>th</sup> November, 2009. As a start point of the cooperation, it is

discussed that WMO VL and RA II Pilot Project newsletters would publish articles introducing each other.

Since the Pilot Project is still in its first phase, most of the activities were focused on the introduction. This issue of newsletter provides articles about (1) JMA's MTSAT follow-on satellite project, (2) the introduction of COMS (Communication, Ocean and Meteorological Satellite) of KMA, (3) the notification of training programme arranged by ISRO(Indian Space Research Organization), INDIA, and (4) the introduction of WMO-CGMS Virtual Laboratory programme.

**Toshiyuki KURINO (Japan Meteorological Agency)**

**Jae-Gwang WON (Korea Meteorological Administration)**

Co-coordinators of the Pilot Project coordination Group

## Status of COMS, Korea's first Meteorological Satellite

KMA has started to receive and utilize the meteorological satellite image in 1970 with the US satellite ESSA-8 data. Since then the international cooperation about the satellite observation has been contributing KMA's weather forecast and the global monitoring activities. Currently, KMA is receiving several foreign satellites data, such as Japanese MTSAT-1R, Chinese FY-1 and 2, and US POES, Terra, Aqua, etc.

In 2003, KMA has started its own meteorological satellite development with the cooperation with other governmental ministries. The name of satellite is the COMS(Communication, Ocean and Meteorological Satellite). The COMS is a geostationary satellite with 3 missions, which are the meteorological observation for the weather forecast support, the ocean color observation for the oceanographic research, and the space proving test for the Ka-band satellite communication payload.

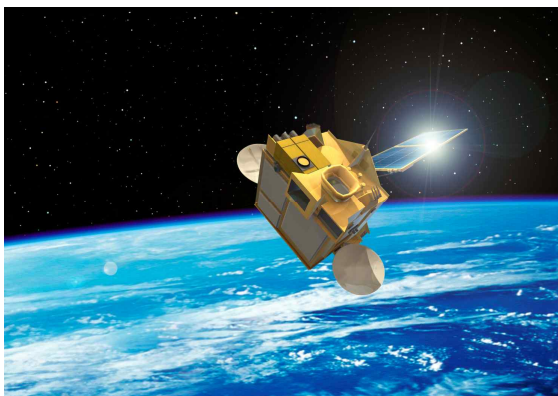


Figure 3. Artist's Image of COMS

The development of COMS is led by KARI(Korea Aerospace Research Institute) in cooperation with a French industry, EADS

Astrium. The overall assembly and integration test for the satellite system has been finished at the head of this year, and the European launch vehicle Ariane-V ECA will raise the COMS on the orbit in May 2010. The operation location of COMS will be 128.2E, which is between Chinese FY-2C and Japanese MTSAT-1R.

The normal operation of COMS is going to begin at the end of 2010 after the In-Orbit Test for about 6 months. After that KMA's NMSC(National Meteorological Satellite Center) will be in charge of the meteorological mission and the data dissemination. NMSC is located 100km south of Seoul, the capital city of the Republic of Korea. NMSC will deliver the COMS images and the meteorological products via the internet and the satellite broadcast in the CGMS HRIT/LRIT format.

With the launch of COMS, KMA will be new meteorological satellite operator after NOAA, EUMETSAT, JMA, IMD, ROSHYDROMET and CMA. COMS data will enhance the weather and climate monitoring capability in Asia-Pacific region. In domestic, COMS will increase the weather observation frequency around Korea peninsula area for the severe weather monitoring. But its data will also be delivered to all the Asia-Pacific users for the international cooperation. KMA's activity for the international cooperation, "the Training for Advanced Analysis of COMS data", has been introduced in the first issue.

*(Jae-Gwang WON, KMA)*

## Plans for Follow-on Satellites to MTSAT-2 (Himawari-7)

The Japan Meteorological Agency (JMA) will launch the new Himawari-8 meteorological satellite in summer 2014 to start operation in 2015, when MTSAT-2 (Himawari-7) is scheduled to complete its period of duty. JMA also plans to launch Himawari-9, which is identical to Himawari-8, in 2016. The two satellites are designed to remain in service for 15 years or more.

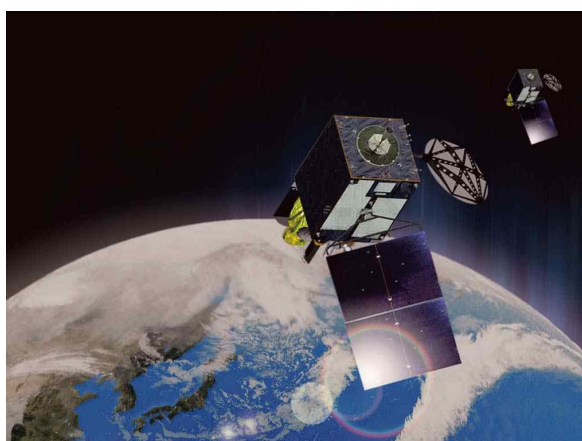


Figure 4. Artist's image of Himawari-8 and -9

Himawari-8 and -9 are scheduled to carry an imager comparable to the Advanced Baseline Imager (ABI) on board GOES-R. To deal with the huge amounts of data to be obtained by these follow-on satellites, JMA plans to provide all observation information via the Internet.

Imaging Channels		
	Spatial resolution	Number of observational bands
VIS (<0.7 micron)	0.5 km-1.0km	3
NIR (0.7-3 micron)	1 km-2 km	3
IR (>3 micron)	2 km	10
Observation		
Imaging Rate	< 10 min (Full Disk)	
Scan Capability	Full Disk: normal operation Area: definable schedule and location	
Lifetime of meteorological mission		
7 years	7 years of in-orbit operation out of a 14-year in-orbit period	

Figure 5. Specifications of the imager on board Himawari-8 and -9

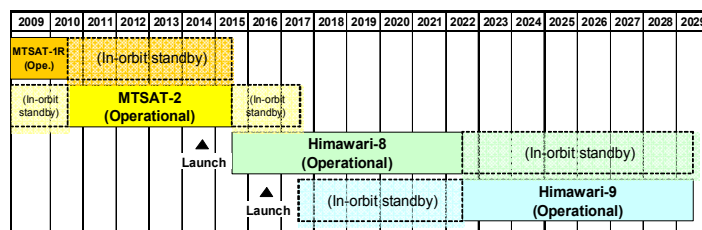


Figure 6. Schedule for Himawari-8 and -9

(Toshiyuki KURINO, JMA)

### Training Programme Introduction;

### The Seventh Post Graduate Course on Satellite Meteorology and Global Climate(SATMET-7)

Indian Space Research Organization(ISRO) has announced a training course programme called SATMET-7, which will be arranged under the aegis of UN-CSSTEAP(Centre for Space Science and Technology Education in Asia and the Pacific). This training will be conducted from August 01, 2010 to April 30, 2011 at Space Application Centre(ISRO), Ahmedabad, India. The detailed information can be found at <http://www.cssteap.org>.

## WMO-CGMS VIRTUAL LABORATORY FOR EDUCATION AND TRAINING IN SATELLITE METEOROLOGY

The concept of the WMO-CGMS Virtual Laboratory for Education and Training in Satellite Meteorology (VLab) was first developed in 1998 and subsequently endorsed by the Coordination Group for Meteorological Satellites (CGMS) in 2000. The (VLab) is a global network of specialized training centres and meteorological satellite operators working together to improve the utilisation of data and products from meteorological and environmental satellites throughout WMO member countries.

CGMS satellite operators and often co-located with WMO Regional Training Centres, are established in all WMO Regions. Each CoE is responsible for conducting training activities in order to meet user needs for increased skills and knowledge in using satellite data within their Region. The activities of the VLab are developed and organised by the VLab Management Group (VLMG) which over the years has developed a long term strategy describing the VLab structure and goals.

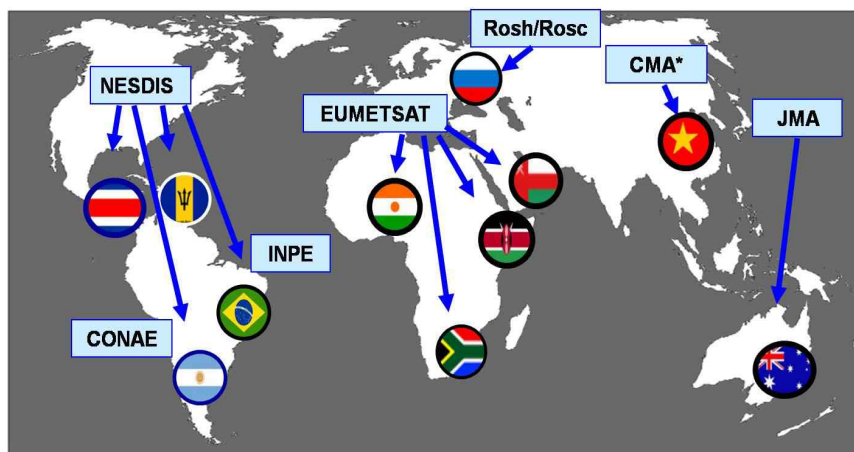


Figure 7. WMO-CGMS VLab links

The VLab consists of seven satellite operators: CMA, CONAE, EUMETSAT, INPE, JMA, NOAA/NESDIS and ROSHYDROMET, and eleven training centres – called Centres of Excellence (CoEs) - located in Argentina (Buenos Aires and Cordoba), Australia (Melbourne), Barbados (Bridgetown), Brazil (Cachoeira Paulista), China (Beijing and Nanjing), Costa Rica (San Jose), Kenya (Nairobi), Niger (Niamey), Oman (Muscat), the Russian Federation (Moscow and St Petersburg) and South Africa (Pretoria). Three CoEs are linked to universities (Buenos Aires, St. Petersburg and Nanjing) and thus are considered as a component of the CoE.

The CoEs, working closely with one or more

The above figure shows the various VLab links between CoEs and their supporting satellite operators (Status: March 2010).

The VLab aims at providing high quality and up-to-date training and supporting resources on current and future meteorological and other environmental satellite systems, data, products and applications.

The VLab members regularly organise training events and web meetings and discuss training activities and developments. Several Regional Focus Groups (RFG) are being organised by the CoEs to widen the access to training events and training resources to other countries in their region. A typical RFG activity is

the online weather briefing where participants from various NMHSs within a WMO Region meet once a month to discuss interesting weather events and prepare case studies that can be used for regional training events.

JMA and KMA are able to use the training methods and training materials of the VLab for their RAll project in order to facilitate training and where appropriate the CoEs can help with their expertise throughout the RAll region.

A key success of the VLab is the greater use of blended learning, a training concept that combines online and traditional methods for training at relatively low cost. For distance learning and web meetings, course management systems such as Moodle, a freely available open source software package and teleconferencing tools like Saba Centra are being increasingly used by the VLab members.

For further information on the WMO-CGMS Virtual Laboratory, please visit the following website: <http://vlab.wmo.int>

*(Meryem UZ, EUMETSAT)*

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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 Pilot Project Coordinating Group. We look forward to receiving your contributions to the newsletter.

(Toshiyuki KURINO, JMA,  
and Jae-Gwang WON, KMA)

*PS : As the editor-in-chief of this issue, Jae-Gwang Won of KMA is responsible for the delay of this second issue.*

## RA II Pilot Project Mailing Lists

Two mailing lists for discussion on the pilot project will soon be set up using the Google Groups service, and will be implemented either through the Google Groups web interface or by e-mail.

One list is for Pilot Project Coordinating Group members who are already registered with the WMO's Regional Office for Asia and the South-West Pacific.

**Group name:** ra2pp\_sat\_cg

**Group home page:**

[http://groups.google.com/group/ra2pp\\_sat\\_cg](http://groups.google.com/group/ra2pp_sat_cg)

**Group email address:**

[ra2pp\\_sat\\_cg@googlegroups.com](mailto:ra2pp_sat_cg@googlegroups.com)

The other list is for RA II Members in general.

**Group name:** ra2pp\_sat

**Group home page:**

[http://groups.google.com/group/ra2pp\\_sat](http://groups.google.com/group/ra2pp_sat)

**Group email address:**

[ra2pp\\_sat@googlegroups.com](mailto:ra2pp_sat@googlegroups.com)

A detailed announcement will be made soon by the co-coordinators inviting RA II Members to register for the mailing list.

(Toshiyuki KURINO, JMA,  
and Jae-Gwang WON, KMA)

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