

# Improvement in Meteorological Satellite Data Analysis and Application Capacity

October 29 (Sun.) – November 24 (Fri.), 2017

Seoul, Republic of Korea



Korea International Cooperation Agency



Korea Meteorological  
Administration

Korea Meteorological Administration

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**1. TITLE: Improvement of Meteorological Satellite Data Analysis and Application Capacity**

**2. PERIOD: October 29 (Sun.) ~ November 24 (Sat.), 2017**

**3. GOAL**

To improve the capability for using and analyzing Meteorological Satellite Data

**4. OBJECTIVES**

- a) To introduce Communication, Ocean and Meteorological Satellite (COMS) & GEO-KOMPSAT-2A program, observation schedule and data distribution policy
- b) To raise understanding of the meteorological satellite data and derived products to improve the capability for monitoring and predicting high impact weather such as tropical cyclone and heavy rainfall.
- c) To improve analysis and application competence in such various fields as marine, climate, the environment, hydrology and others by using GEO satellites data.
- d) To strengthen future cooperation in the area of meteorological satellite among participating countries

**5. NUMBER OF PARTICIPANTS: 20 participants from 13 countries:**

Nepal (2), Timor-Leste (2), Mongolia (2), Bangladesh (2), Solomon Islands (2), Ukraine (1), Cambodia (1), Peru (2), the Philippine (1), Myanmar (2), Vietnam (1), Laos (1), Sri Lanka (1)

**6. LANGUAGE OF INSTRUCTION: English**

**7. VENUE: Seoul, Republic of Korea**

**8. TRAINING INSTITUTE: Korea Meteorological Administration (KMA)**

## 9. ACCOMMODATIONS:

- 1) KOICA International Cooperation Center (ICC)  
(<https://training.koica.go.kr>)

## 10. QUALIFICATIONS FOR APPLICANTS:

Mandatory	<ul style="list-style-type: none"><li>a) Minimum level of work experience: scientists or staff in charge of satellite meteorology or weather forecast with at least 3 years of experience;</li><li>b) Be nominated by his/her government;</li><li>c) Be in good health both physically and mentally, enough to take the course;</li><li>d) Has not participated in the same KOICA fellowship program in the past 3 years - unless otherwise specified;</li><li>e) Show a high level of participation and commitment throughout the course and promote capacity building in his/her organization after the completion of the program.</li></ul>
Preferable	<ul style="list-style-type: none"><li>a) Be a working-level government employee</li><li>b) Sufficient Proficiency in written and spoken English</li><li>c) Working knowledge of computers and PowerPoint software</li><li>d) Likely to continue the work for at least one more year after completing the training course</li></ul>

**1. COURSE MODULE**

Module	Lecture & Discussion
<b>Module 1</b> Korean meteorological satellite program	<ul style="list-style-type: none"><li>- Introduction to the National Meteorological Satellite Center (NMSC)</li><li>- Vision and mission of NMSC</li><li>- Master plans of the national space development program</li></ul>
<b>Module 2</b> COMS data processing and products	<ul style="list-style-type: none"><li>- Basic principle of radiation</li><li>- Basic operation, receiving, processing and service of COMS</li><li>- Interpretation of 16 baseline products of COMS and their application</li></ul>
<b>Module 3</b> Satellite imagery interpretation	<ul style="list-style-type: none"><li>- Interpretation of a single channel imagery</li><li>- Observation of surface feature, cloud types and their characteristics</li><li>- Understanding of cyclogenesis in the satellite imagery</li><li>- Interpretation of broadscale, synoptic and mesoscale phenomena</li><li>- Utilization of microwave images and products such as precipitation, sea surface wind, temperature and humidity profile from GPM, Metop, DMSP etc.</li><li>- Practice with a case study</li></ul>

<p><b>Module 4</b> KMA's GEO-KOMPSAT-2A satellite</p>	<ul style="list-style-type: none"> <li>- Current status of KMA's next geostationary satellite (GEO-KOMPSAT-2A) development</li> <li>- Understanding of the difference between legacy COMS and GEO-KOMPSAT-2A</li> <li>- Ground system development of GEO-KOMPSAT-2A</li> <li>- Data service and dissemination policy of GEO-KOMPSAT-2A</li> <li>- Baseline products for clouds and precipitation parts</li> <li>- Baseline products for radiation and aerosol parts</li> <li>- Baseline products for Atmosphere and aviation parts</li> <li>- Baseline products for scene analysis and surface information parts</li> <li>- Understanding of fundamental RGB techniques and their applications</li> <li>- Weather monitoring and rapid-scan data using Himawari-8 data</li> </ul>
<p><b>Cultural Experience and Study Visit</b></p>	<ul style="list-style-type: none"> <li>- Visit to the National Weather Center (NWC) and the Information and Communication Center (ICT) in the KMA (<a href="http://www.kma.go.kr">www.kma.go.kr</a>)</li> <li>- Visit to the Korea Aerospace Research Institute (KARI) and the Electronics and Telecommunications Institute (ETRI) (<a href="http://www.kari.re.kr">www.kari.re.kr</a>, <a href="http://www.etri.re.kr">www.etri.re.kr</a>)</li> <li>- Visit to Korean Industry fields (Jeju Island)</li> <li>- Seoul City Tour (<a href="http://www.visitseoul.net">www.visitseoul.net</a>)</li> </ul>

**1. GUIDELINES FOR THE PREPARATION FOR THE COUNTRY REPORT**

A Country Report is an in-depth report that contains an analysis of the current development issues facing your countries in the field of your expertise. The KOICA's Fellowship Program includes a Country Report session where participants have an opportunity to share these issues with other participants and Korean experts. Throughout the course, you can engage in debates and discussions to resolve them.

A Country Report is directly connected to an Action Plan. Based on what you present and discuss throughout the course, you are requested to present an Action Plan on the last day of the course to develop practical measures to apply the knowledge, technologies and experience learned to your work.

Program participants are requested to prepare and submit their Country Report individually or as a group **to the KMA Program Manager via e-mail ([tjsohn17@korea.kr](mailto:tjsohn17@korea.kr)) no later than October 26, 2017**. The Country Report should be written in English and double-spaced in MS PowerPoint or Word format. The length of the report should not exceed twenty A4-sized pages.

All participants are required to give a 15-minute presentation on their Country Report individually or as a group on the second day of the course. For more effective presentations, a projector, slide projector, overhead projector, and multimedia TV will be available for use (PowerPoint presentations are preferred).

## **2. TOPICS TO BE COVERED IN THE COUNTRY REPORT**

- In the beginning of the training course, all participants will make a group presentation titled "Country Report" following the given guidelines.
- Based on what you have presented and discussed throughout the course, you are requested to present an Action Plan on the last day of the workshop.

### **A. Subject**

- Analysis of Strengths and Weaknesses in Meteorological Satellite data service

### **B. Details of Country Report Preparation**

#### **• National Satellite Policies**

- Explain Satellite-related policies for national meteorological services (Short-term or long-term plans: goals, priorities, strategies, etc.)
- Explain main functions and tasks of the satellite part in the organization

#### **• Responses to the following questions**

- What's the major weather phenomena causing hazard in your country?
- How do you observe and forecast those issues?
- What kind of data do you use including satellite data?
- How competent are your staff members in acquiring and analyzing satellite data?
- What's your plan to upgrade satellite data acquisition and analysis?
- What do you expect to gain from this training course?

#### **• Future direction and cooperation**

- Describe satellite needs considering current issues
- Describe what participants expect to gain from the training course

- **Country Report should also include the topic you would like to discuss during the workshop.**



**1. GUIDELINES FOR CREATING AN ACTION PLAN**

An Action Plan is a specific plan created by participants on how to apply lessons learned to their work. Action Planning is a process in which participants can identify their objectives and explore what steps they need to take to achieve their goals. Establishing and implementing the Action Plan will contribute not only to their professional development but also to their organization.

A good Action Plan contains detailed information like what can be done, who will do it, and how and when. Please keep in mind that meeting the financing requirement including budget and timeline is crucial in making the action plan feasible and applicable.

All participants are requested to prepare for a presentation on their Action Plan individually or as a group at the end of the course. They are encouraged to make the most of their weekends and free time to further the knowledge acquired from the course and better prepare for the presentation.

Participants can receive feedback from Korean experts who will share their insight and help upgrade the Action Plan. Even after participants return to their home countries, KOICA will continue to follow up with participants on the progress being made through the implementation of their Action Plan. KOICA look forward to all participants achieving their desired outcomes.

**2. TOPICS TO BE COVERED IN THE ACTION PLAN**

- a) Bring up various problems or issues related to the country's current situation of Meteorological Satellite data service.
- b) Find out the best way to solve the problems by using the information and knowledge achieved from the course.
- c) Make practical and specific proposals and specify their implementation plans.
- d) Think about how it will affect the current problems and what advantages can be made in the future.

- e) Discuss how it can be applied to your current work including a budget and a financing plan.
- f) Expected Results

### **3. STEPS FOR THE ACTION PLAN**

- **[Step 1] Present Country Report**

- On the 1<sup>st</sup> day of the course, participants are requested to share their country's current situation and issues of their interest through Country Report presentation
- KMA will provide an orientation for writing an Action Plan

- **[Step 2] Lecture on Methodology / Grouping**

- Lecture on Action Plan methodology
- Forming a Action Plan working group

- **[Step 3] Group Discussions / workshops**

- Brainstorming and group discussions for the development of an Action Plan
- Consultation with experts and feedbacks on the Action Plan

- **[Step 4] Complete Action Plan**

- Establishment of an Action Plan for the development of upgraded policies or programs
- Presentation on the final Action Plan and feedback

## **1. TRAINING INSTITUTE**

### **A. Korea Meteorological Administration (<http://www.kma.go.kr>)**

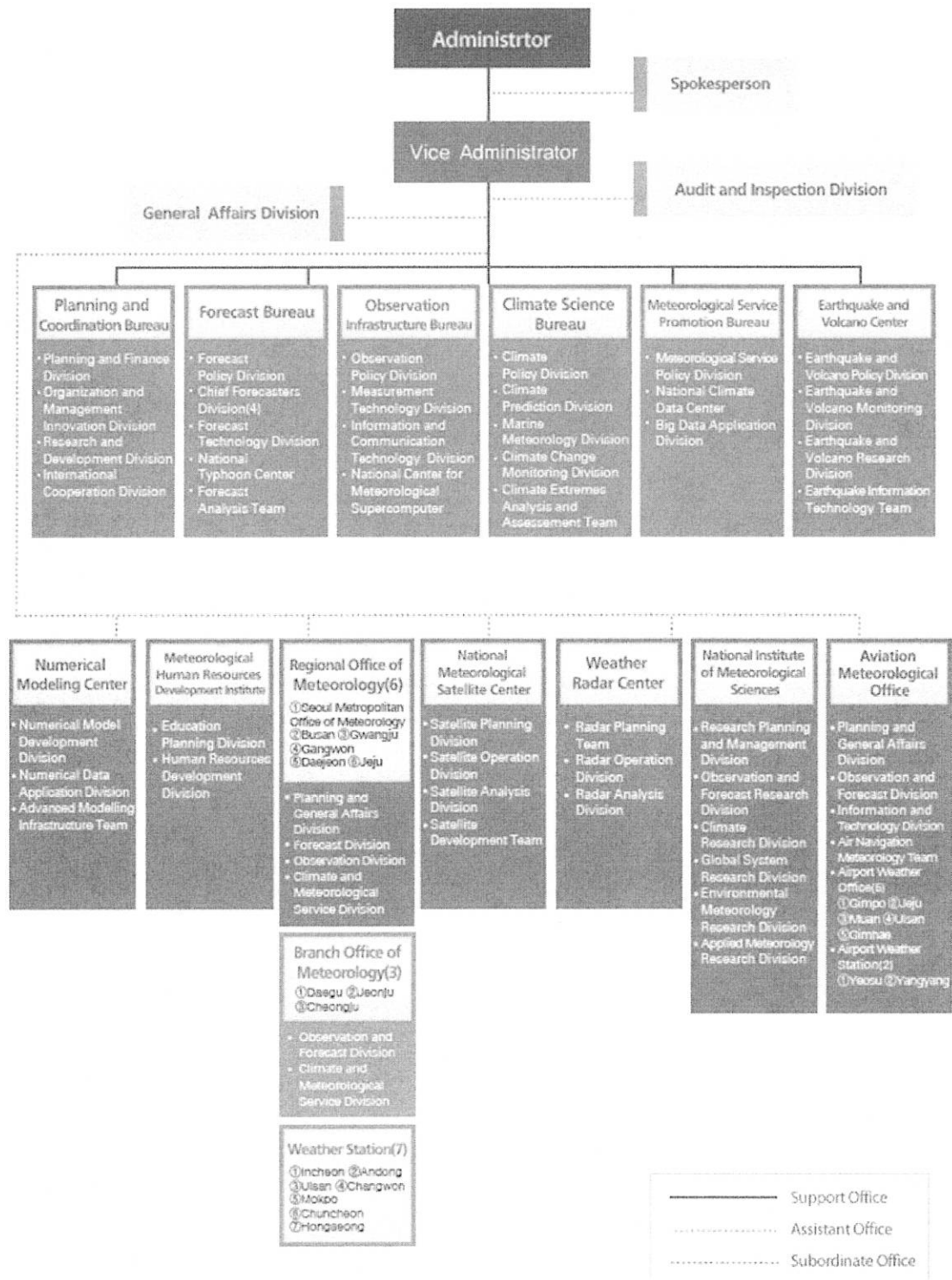
The KMA is a governmental organization of the Republic of Korea under the Ministry of Environment (MOE). Its mission is defined to protect citizens' lives and properties from natural disasters and improve the commonwealth of the public in ways such as providing support for economic activities. In this regard, KMA undertakes the observation and analysis of meteorological phenomena on the ground, in the ocean, and in the atmosphere, while providing weather forecasts and warnings, and presents climate statistics and industrial-meteorological data. Furthermore, KMA exchanges meteorological data and information with domestic and foreign organizations, conducts research and technology development activities, and prompts international cooperation.

KMA's head administration consists of 1 administrator, 1 vice administrator, 5 director generals, 30 divisions, and 3 centers. Its subsidiaries include the National Institute of Meteorological Research (NIMR), 5 regional administrations, the National Meteorological Satellite Center, the Weather Radar Center, and the Korea Aviation Meteorological Agency. The total number of KMA staff is approximately 1,300.

### **B. National Meteorological Satellite Center (<http://www.nmsc.kma.go.kr>)**

National Meteorological Satellite Center (NMSC), which belongs to the Korea Meteorological Administration (KMA), is located in Jincheon-Gun about 70km southeast from Seoul. It carries out comprehensive operation of the ground system of COMS (Communication, Ocean and Meteorological Satellite) that is the first geostationary meteorological satellite of Korea launched in 2010. NMSC started service of COMS Images from April 2011 together with various COMS products. NMSC is also responsible for research on meteorological satellite data as well as receiving and processing of foreign satellites products.

The NMSC has a plan to launch next geostationary satellites. One (Geo-KOMSAT-2A) is for weather and space weather observation and the other (Geo-KOMSAT-2B) is for ocean and environment observation. Geo-KOMSAT-2A is scheduled to be launched in 2018, while Geo-KOMSAT-2B in 2019.



## 2. CONTACT INFORMATION

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