

# KMA and CMA training activities



Korea Meteorological  
Administration

Jinho Shin in KMA

Jingmian Deng in CMA



The 12th Asia-Oceania Meteorological Satellite Users' Conference  
Joint RA II - RA V coordination Meeting  
18 November, 2022. Japan

# KMA training activities

- ◆ KMA Reported on training activities conducted by KMA since 2007.  
Participants in the **WMO VLab program** and contributed to the WMO Vlab Technical Support Officer initiative since 2012
  - Online joint regional focus group meeting with CoE- Australia in August and December, 2021
  - Attending total 133 people from 28 countries during 2019~2022
- ◆ KMA training event activities in **AOMSUC** : 8 times during 2018~2022
- ◆ Related to **KOICA/ODA program**, run RA II region program for NMHS forecasters since 2010s: Bangladesh, Cambodia, Vietnam, Laos etc
  - Geo-Kompsat 2A data receiving and analysis system developed in Bangladesh and Cambodia until 2023
  - Attending total 82 people from 3 countries during 2021~2022
- ◆ 30 **Domestic forecaster training courses** participated by total 400 forecasters/aviation experts/volcano experts in KMA etc

# KMA training activity in WMO Vlab

Num	Activity title	Date
1	Application of Geo-Kompsat data for severe weather detection	31 Oct., 2021
2	Autumn Heatwave in Korea	4~5 Oct., 2021
3	Satellite analysis for tropical cyclone over KMA	13 Aug., 2020

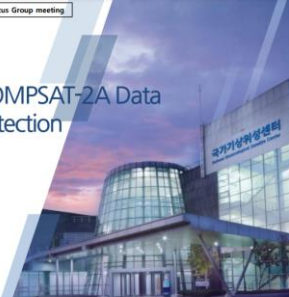
Joint Korea Australia Vlab Centres of Excellence Regional Focus Group meeting

## Application of GEO-KOMPSAT-2A Data for Severe Weather Detection

2021. 8. 31.

KMA/NMSC

Okhee KIM

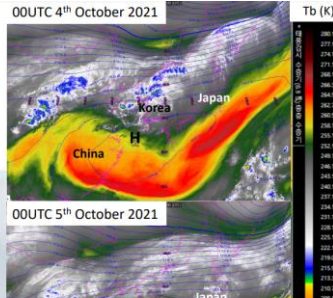


### 5: Autumn Heatwave in Korea

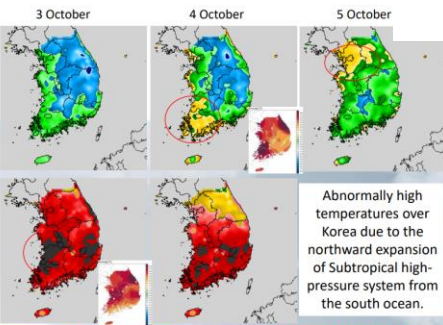
GEO-KOMPSAT-2A 6.9 micron band and 500hPa height  
4th - 5th October 2021

Example provided by Ok Hee Kim, Korea Meteorological Administration

Administrat Vlab Centre c



### Surface temperatures over South Korea



Abnormally high temperatures over Korea due to the northward expansion of Subtropical high-pressure system from the south ocean.

[WMO Vlab Regional Focus Group meeting]

## Satellite Analysis for Tropical Cyclone over KMA

August 13, 2020

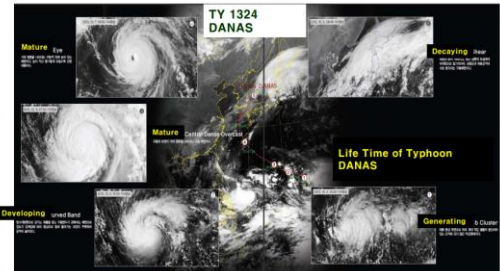
Jun Park (jun.park@kma.go.kr)

Satellite Analysis Division  
National Meteorological Satellite Center

Ko



### Typical pattern of Typhoon near Korea



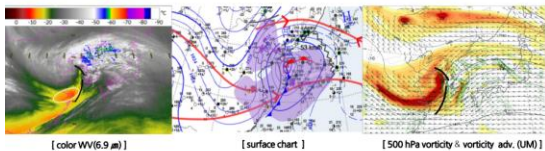
Generating -> Developing -> Mature -> Weaking  
①Cb Cluster -> ②Curved Band -> ③CDO -> ④EYE -> ⑤SHEAR

### 7. Trough analysis using Water Vapor Image and Chart

#### 1) Trough Comparison in chart

- > Wind-changing areas in 500 hPa wind field / the lowest areas in 500 hPa pressure
- > Relative vorticity Maximum area / Just behind relative vorticity Maximum area

images courtesy Korea Meteorological Administration



Minimum Temperature

Maximum Temperature

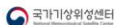
2020.01.07. 21:00KST(12UTC)

# KMA training activity in AOMSUC

2021 AOMSUC-11 Training Event organized by CMA

## Application of GEO-KOMPSAT-2A Data for Severe Weather Detection

2021. 10. 28.  
NMSC/KMA  
Okhee KIM



AOMSUC-11 FY-USERCON 2021 1-5 November 2021 Beijing, China

[AOMSUC-11 Training Event]

## Satellite Analysis for Tropical Cyclone over KMA

October 28, 2021  
Jun Park (jun.park@kma.go.kr)  
Satellite Analysis Division  
National Meteorological Satellite Center  
Korea Meteorological Administration

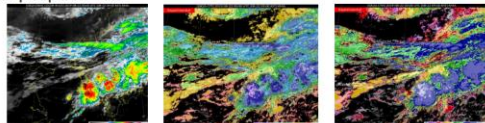
AOMSUC-11

## Introduction to KMA's Satellite Data Service

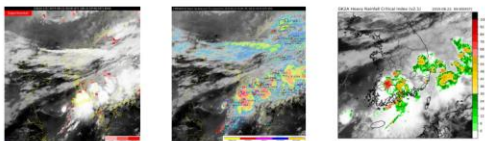
NMSC / KMA  
Taekyu Jang

## 1. Satellite products for heavy rain analysis

- products for heavy rain analysis : IR, VIS, WV, and composite images, Rain rate, total precipitable water



Enhanced IR CTP CTH



C (convective initiation) RDT (rapid developing thunderstorm) Heavy rain index

⇒ The products provide information of cloud top temp. & height.  
⇒ It is difficult to identify cloud development situations on the ground.

## Tropical Cyclone Analysis

**Main Window**

- Data selection (time, area, type, etc)
- Layer display
- Analysis tools (palette, effect, video, contour, distribution, editing, etc)
- Phenomena (Typhoon, Flood, Cloud, Fire/Volcanic ash/Fog etc)

**Secondary Window**

- SDT Analysis (intensity, center position, etc)
- Automated analysis (ADT, KADT, GTS, Archer, etc)

01 • Weather Broadcasting Service

GK-2A Satellite 35,786Km (128.2E)

**Large-scale Data Utilization Station (LDUS)**

- Large-Scale Data Utilization Station
- UHRT broadcasting/high resolution Level 1B reception
- Utilization of commercial DVB-S2 receiver
- Weighted/synthetic image display

**Medium-scale Data Utilization Station (MDUS)**

- Medium-Scale Data Utilization Station
- HRIT broadcasting reception
- Application of SDR (SW demodulation) decoding technology
- Backward compatibility with COMS broadcasting receivers

**Small-scale Data Utilization Station (SDUS)**

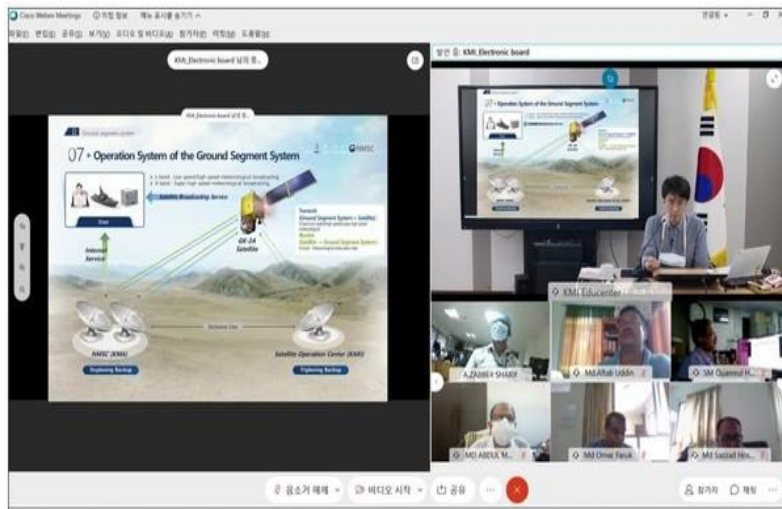
- Small-Scale Data Utilization Station
- LRIT broadcasting reception
- Application of SDR (SW demodulation) decoding technology
- Building the low-cost system (application of omni-directional antenna)

**Non-stop weather broadcasting service**

- LRIT (Low Rate Information Transmission)
- HRIT (High Rate Information Transmission)
- UHRT (Ultra High Rate Information Transmission)

# KMA training activity in KOICA/ODA

No.	Program	Date
1	2022 Invitational Training Course for Cambodia (12 forecasters)	31 Oct. ~ 18 Nov., 2022
2	KOICA Training Course for Vietnam (30 officials)	17 Oct.~ 28 Oct., 2022
3	Real-time Online Training Course for Cambodia (11 forecasters )	23 Nov.~ 26 Nov., 2021
4	Online training course of capacity building for Bangladesh (30 forecasters)	30 Nov. ~10 Dec, 2021



2021 Online training course on capacity building for Bangladesh forecasters, 30 Nov. ~10 Dec., 2021



2022 Invitational training course on capacity building for Cambodia forecasters, 31 Oct.~18 Nov., 2022

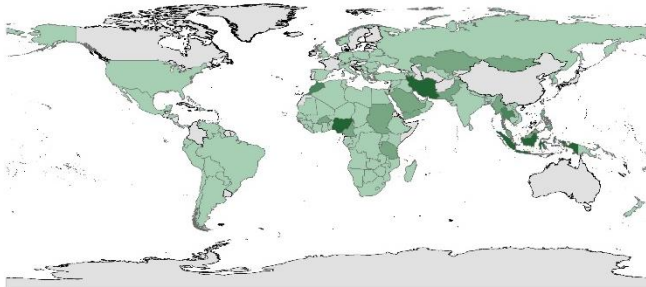
# CMA training activities

Recent 3 years...

**4151** participants

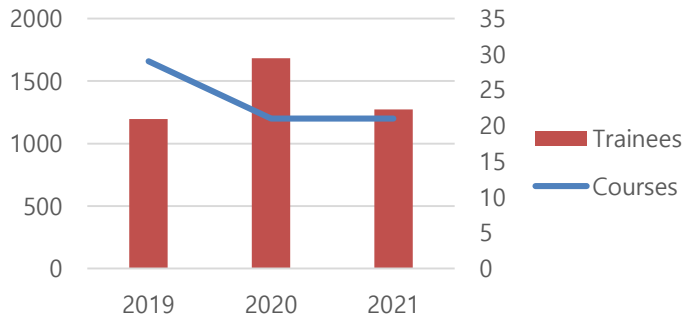
**115** WMO Members

**71** related training courses

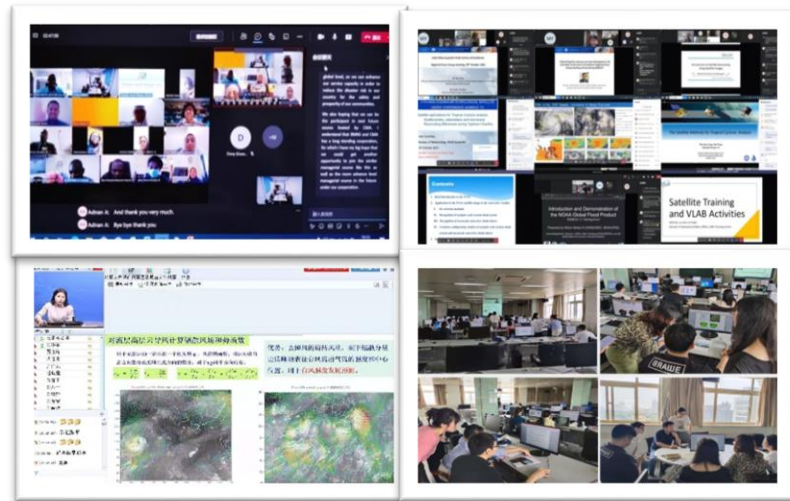


卫星培训 satellite

0 1-30 31-50 51-100 101-150 151-200



The CMA Training Centre (CMATC) holds both international trainings and domestic trainings for satellite meteorologists, offering training opportunities for around 1000 meteorologists per year. In 2021, CMATC co-organized AOMSUC-11 2-day Training events, inviting experts from CMA, JMA, KMA, BOM, BMKG, and NOAA etc., training over 100 international participants virtually.



**Thank you  
for your attention!**