



KMA Report on the Status of Current and Future Satellite

Presented to CGMS-50 Plenary

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Status of the Korea Geostationary Satellites (COMS, GK2)

- **COMS** Meteorological mission (MI) was ended at 31 March 2020 and after one year Ocean Monitoring mission (GOCI) was also ended (31 March 2021).
- **GK2A**, which has two payloads AMI and KSEM, has been operational since 25 July 2019 and will continue to provide observational data until the end of 2029.
- **GK2B**, which has two payloads GOCI-II and GEMS, has been operational since October 2020.
- KMA is implementing the feasibility study to prepare for the follow-on of GK2A satellite in 2022~2023.
- Ministry of Oceans and Fisheries (MOF) and Ministry of Environment (ME) have implemented the conceptual studies of the follow-on of GK2B satellite.



MI: Meteorological Imager; **GOCI**: Geostationary Ocean Color Imager

AMI: Advanced Meteorological Imager; **KSEM**: Korean Space wEather Monitor

GOCI-II: Geostationary Ocean Color Imager-II; **GEMS**: Geo. Environmental Monitoring Spectrometer

GK2A Request-based Rapid Scan Observation (started in Feb. 2021)

- Global users in GK2A coverage can request **Target Area Observation** for their own purpose via [KMA rapid scan request webpage](http://datasvc.nmsc.kma.go.kr/datasvc/html/special/specialReqMain.do) (<http://datasvc.nmsc.kma.go.kr/datasvc/html/special/specialReqMain.do>)
 - Target Area Observation: 1,000 x 1,000 km² every 2 minutes
- [Portal on the RA II WIGOS Project website](https://www.jma.go.jp/jma/jma-eng/satellite/ra2wigosproject/ra2wigosproject-intro_en_jma.html#request) of the request-based high frequency regional observation launched by CMA, JMA and KMA is also available (https://www.jma.go.jp/jma/jma-eng/satellite/ra2wigosproject/ra2wigosproject-intro_en_jma.html#request)

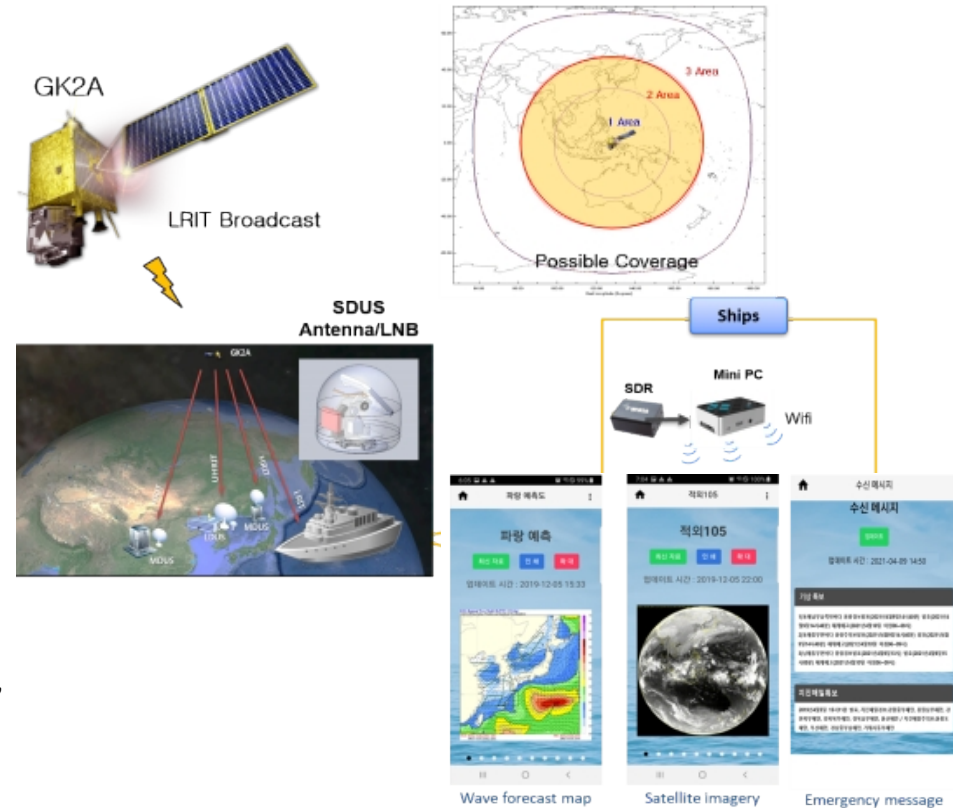
GK2A Open API data service (started in Nov. 2020)

- **Open API data service** is available to any agency, company, academia and individual that want to use the GK2A data.
 - user application form posted on NMSC website (<http://nmsc.kma.go.kr/enhome>, kmasod@korea.kr)

Marine weather broadcast service via GK2A

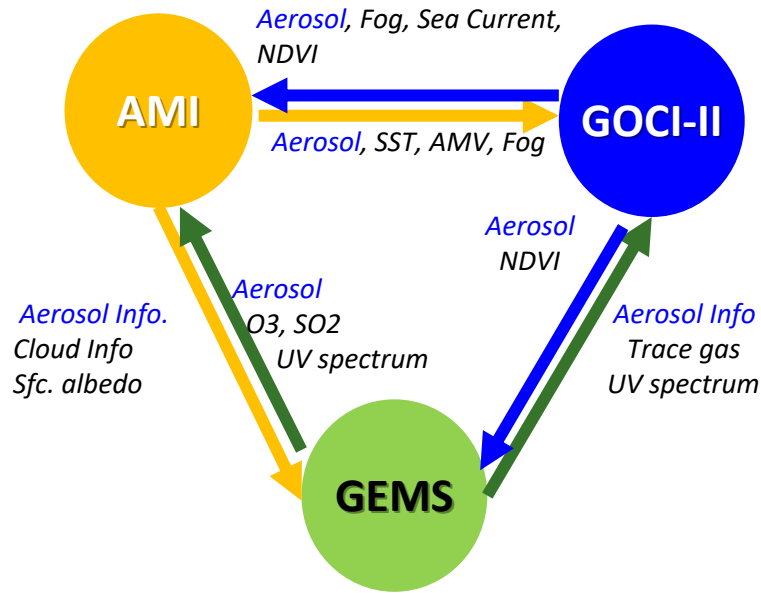
KMA has started new **marine weather broadcast service** by GK2A satellite from July 23, 2020

- To provide high-quality digital marine weather information to ships and remote area in the RA-II and RA-V regions
- To use the GK2A LRIT broadcast and receive its information with 2-axis antenna and reception system connects with the user's smartphones, tablets and etc.
 - Broadcast 15 types of information including surface and wave analysis and forecast charts as well as GK2A satellite images
- To broadcast the emergency message within ten minutes for the domestic users
 - Emergency message : severe weather and disaster information such as typhoon, storm, earthquake and tsunami warning
- To expand the service as the RA II WIGOS Pilot project, and will start the international service for BMKG Indonesia in 2023

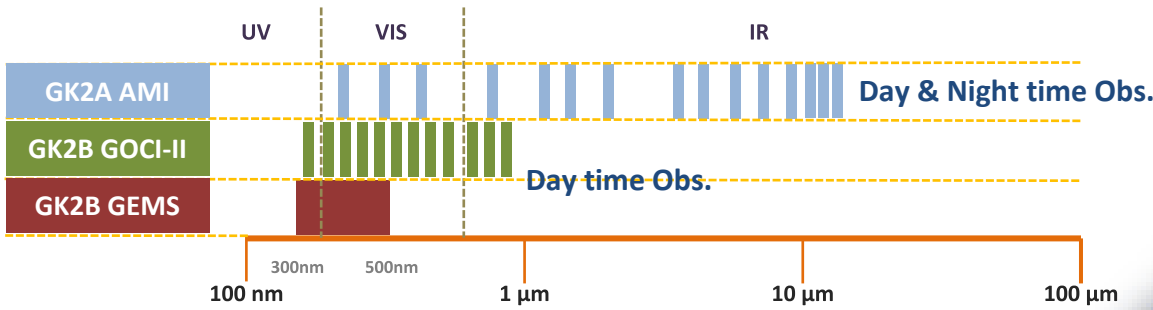


Marine weather broadcast service screen example

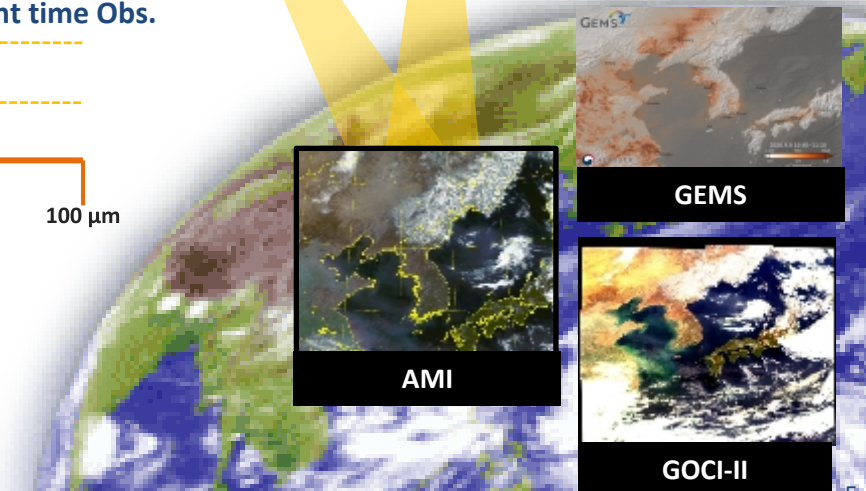
Collaboration of GK2A and GK2B



- GK2B mission has been operational since October 2020
- GK2A-GK2B Inter-comparison and co-application studies started in 2022



✓ **Technical issues:** # of channel, bandwidth, spatial/temporal resolution, observation area



KMA Meteorological Satellites Mid and Long-term Plan (2022~2040) - Goal and Implementation Strategy

Vision

**Meteorological Satellites services
for leading a safe and prosperous society**

Goal

Provision of high value-added meteorological satellites information

Stereoscopic satellite observation system

Meteorological observations using multi-satellites
(GEO-LEO)
Smart integrated satellite operating system

Enhancing climate change monitoring

AI-based real-time severe weather detection technology
Satellite-based decision-making information service

Smart satellite information service

Big data service cloud platform
Establish real-time global satellite data hub

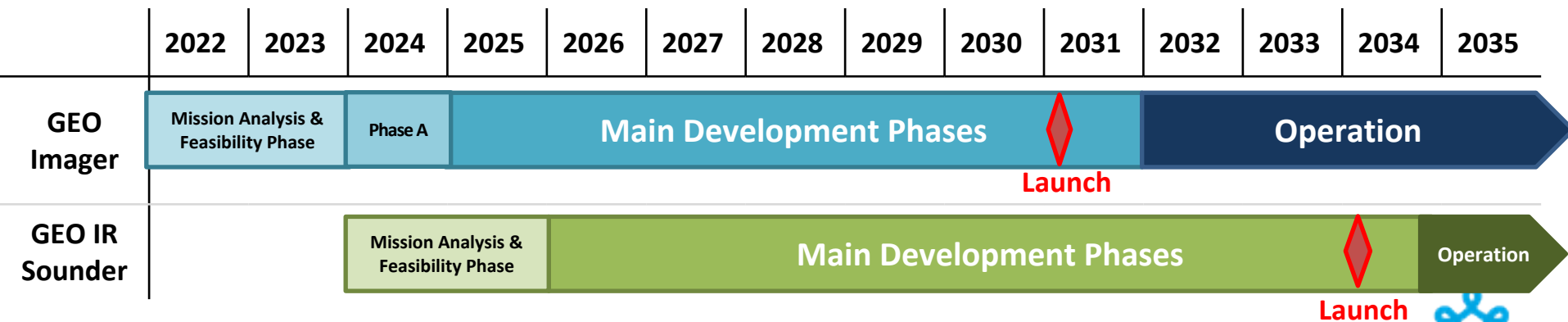
Strengthening global leadership

Expand leadership through global cooperation
Activate industrial ecosystem through
public and private cooperation

KMA Meteorological Satellites Mid and Long-term Plan (2022~2040)

The Geo-KOMPSAT-2A follow-on program

- The KMA GEO satellite program will continue based on CGMS baseline and WIGOS vision 2040.
 - VIS/IR Imager, hyperspectral sounder, space weather mission
- KMA's long-term satellite development plan (2022) introduced **the multi-GEO program**; one is Imager and another is Hyperspectral IR Sounder.
 - To consider **GXI** with 18 channels as **the GEO imager FO program**
 - The impact studies on KMA weather forecast performance of **the GEO sounder** is underway collaborating with NWP center.



Thank you

