

# GEMS (Geostationary Environment Monitoring Spectrometer)

## Current Status



Jeong Ah Yu and ESC Members

Environmental Satellite Center (ESC)

National Institute of Environmental Research

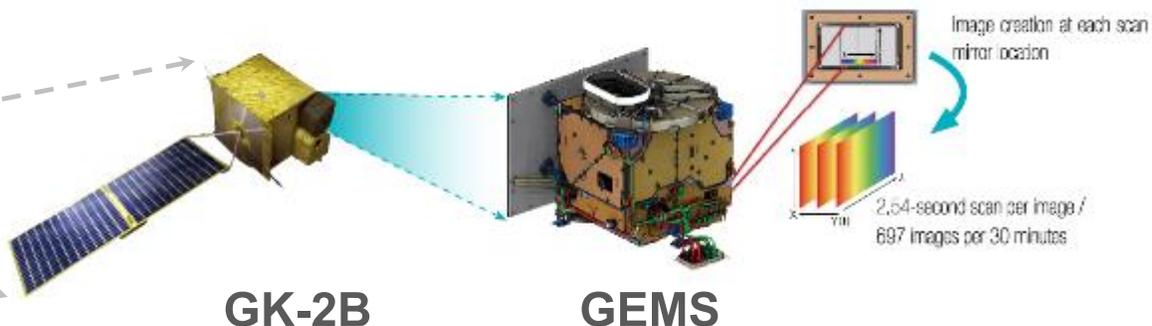


GEMS



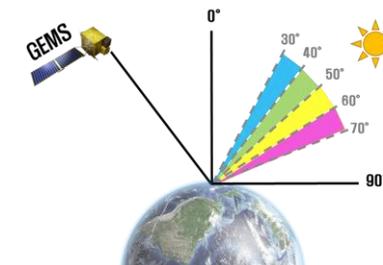
# Launch of GEMS and its observation area

Launch on 19 February 2020 (the Guiana Space Center)

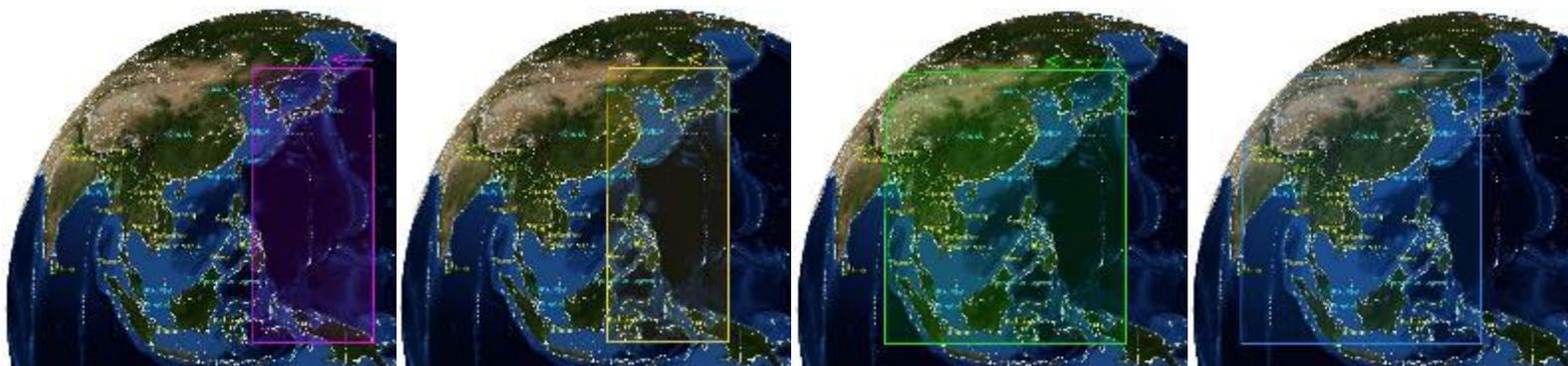


Scan Area by solar zenith angle

Solar Zenith Angle : angle between the sun and the vertical

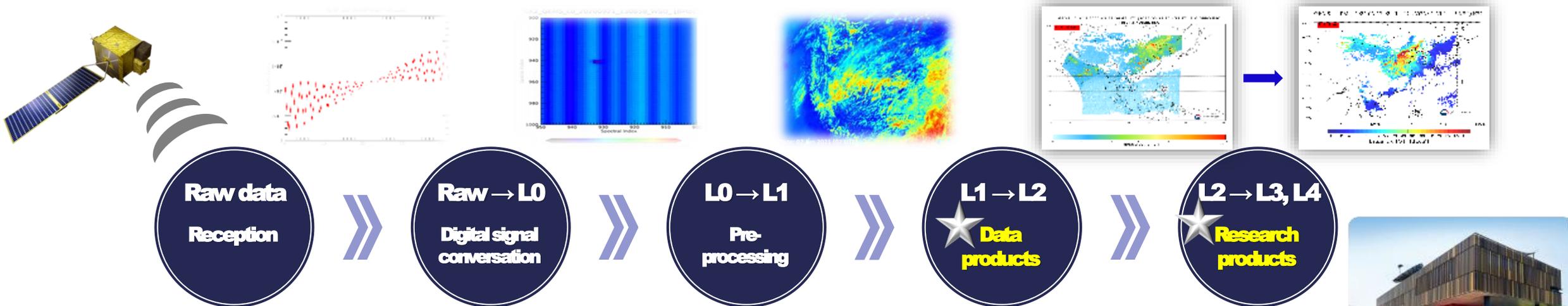
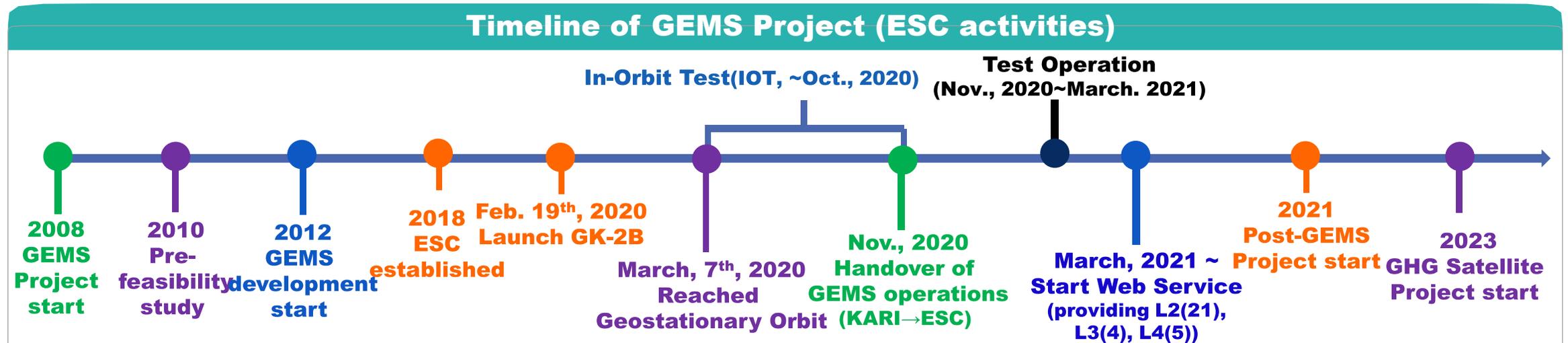


Scan Area



Countries in GEMS domain (20)





## Groundwork stage(~2019)

## Initial Algorithms

(V.0.1.X) Simulation data, applying algorithms to the data derived from other satellites data

## Initial stage(~2020)

## IOT

(V.0.2.X~V.0.4.X) Algorithms updates based on GEMS data, Look Up Table updates, checking the accuracy of input/output values

## Developmental stage(~2021)

## Release images

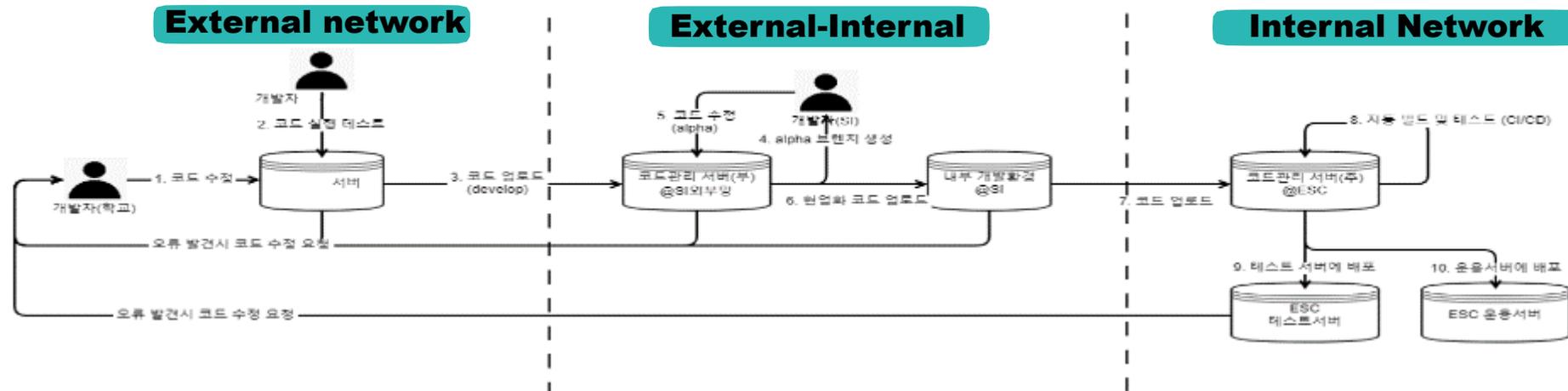
(V.0.5.X~V.0.9.X) Analyzing the problems of released images and updating images

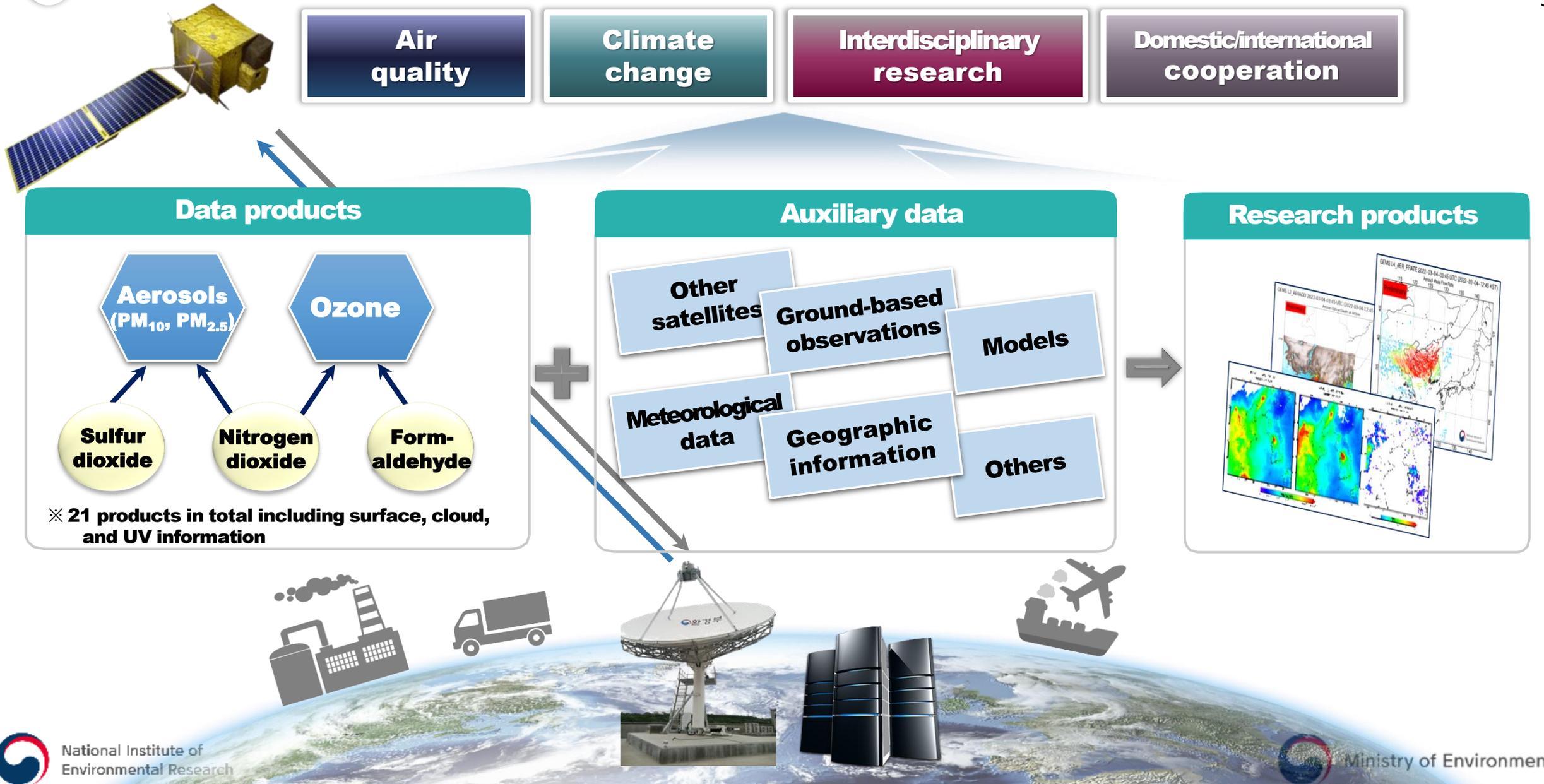
## High growth period(2022~)

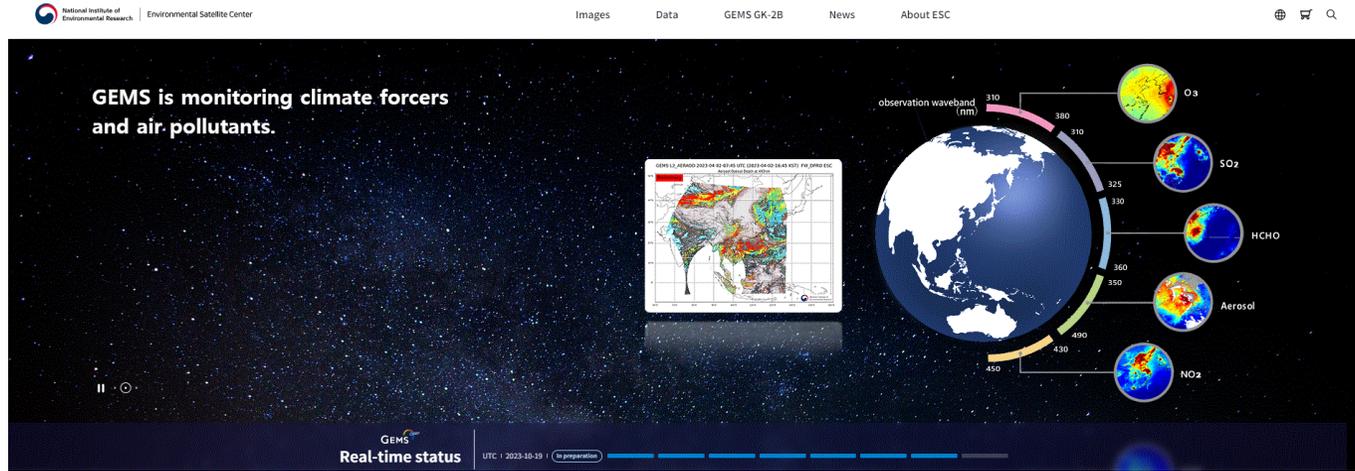
## Release NC files

(V.1.0.X~) Optimizing algorithms including calibrating parameter, promoting the cooperation of researchers

## Procedure of algorithm update

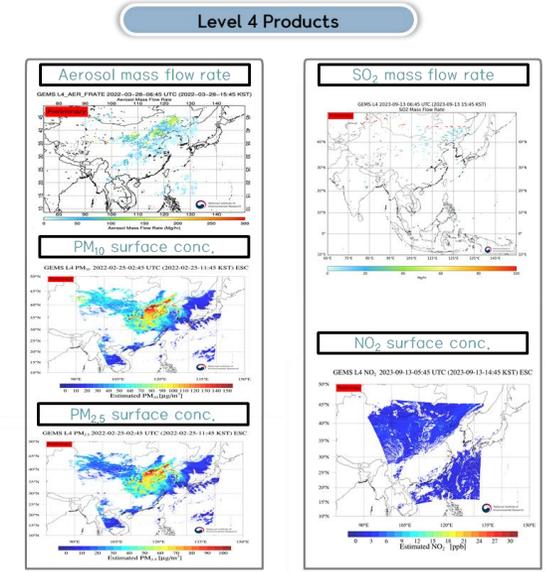
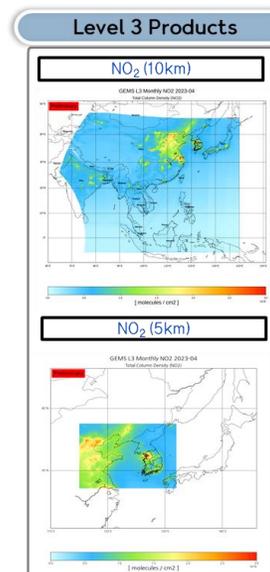
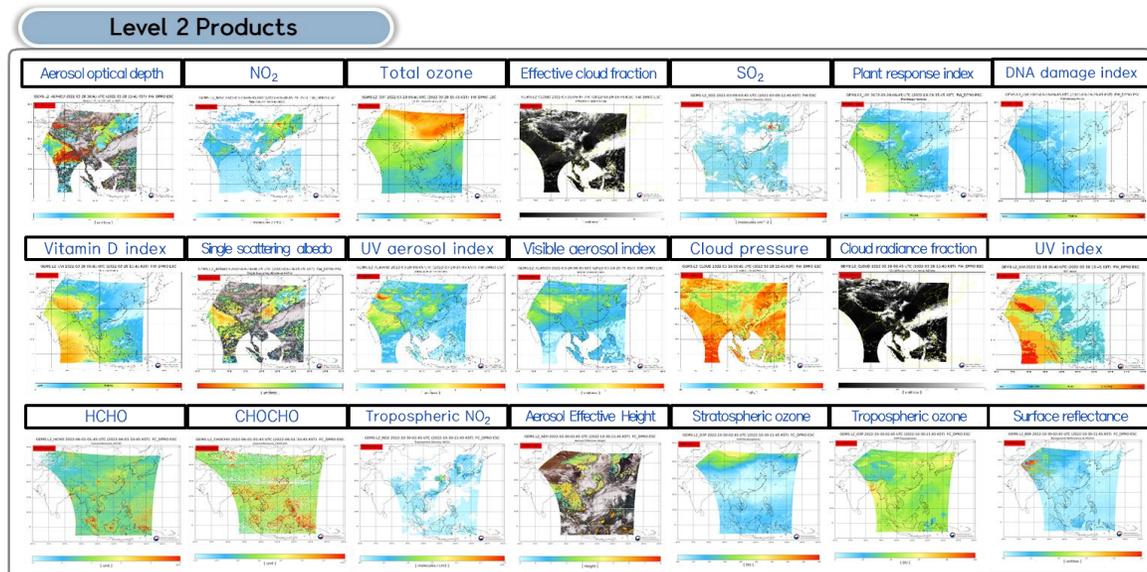




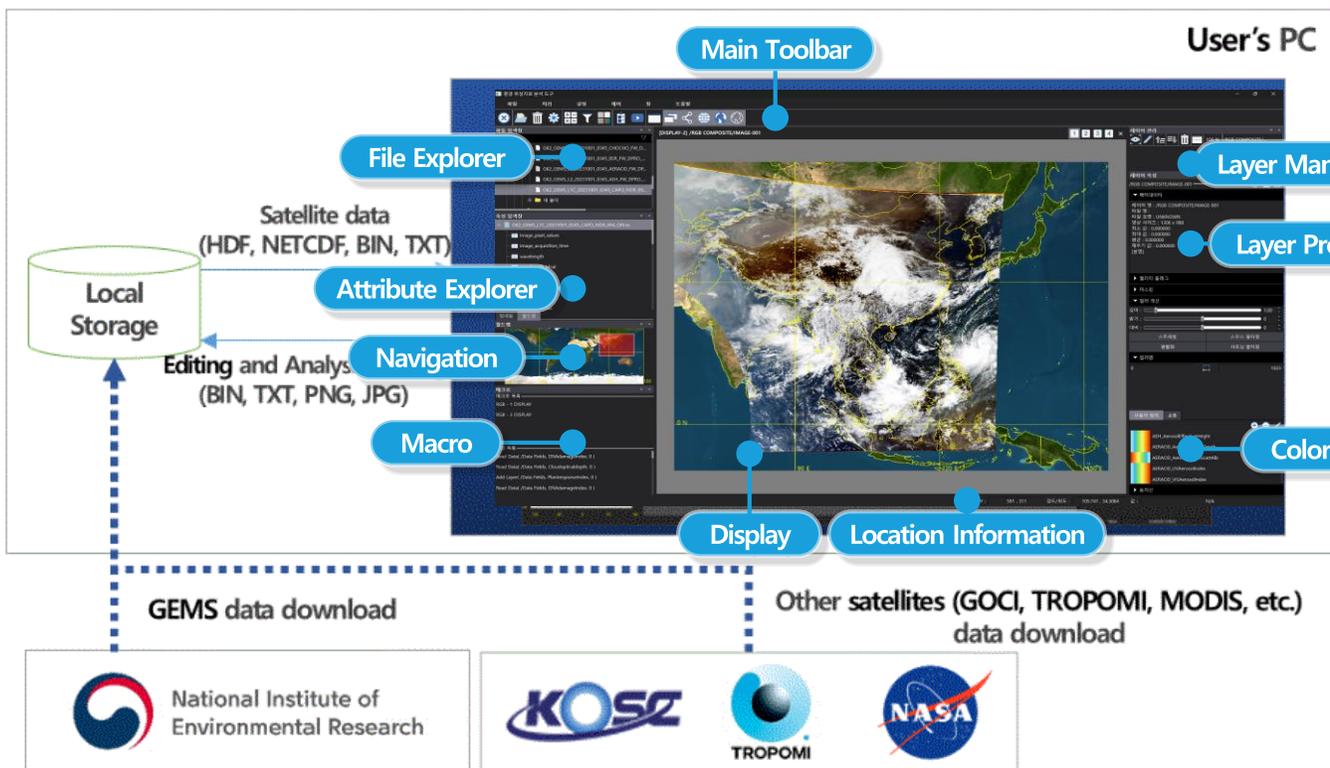


- Image : Web, Mobile App, OpenAPI, ...
- Data (NetCDF) : Web, SFTP, OpenAPI, External hard drive

## GEMS Products (L2, L3, L4)

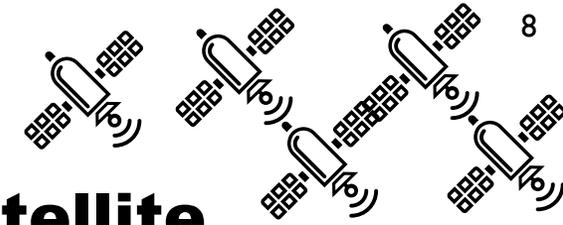


GEMS Application Tool is a Windows/Linux-based visualization/editing/analysis tool for image and data processing support of GEMS data



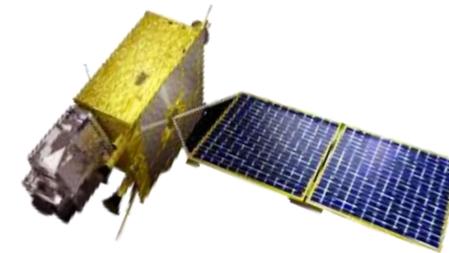
- An easy-to-use user interface for non-experts
- Stand-alone software for research/education, compatible with desktop computers
- Operational on both Windows and Linux





- **Getting ready for Micro cluster GHG observation satellite**

- Conducting preliminary planning studies for the launch of Micro cluster GHG observation satellite (scheduled for 2027)



- **Preparatory work for GEMS-II (Post GEMS)**

- Proceeding with technical reviews to determine future instrument specifications for GEMS-II
- Identifying the target products for GEMS-II
- Working on securing the necessary budget for GEMS-II, including all costs (post 2030)

# Thank you

