The Construction of Data Sharing Center and the Development of Representative Online Data Processing Toolbox for Key Regional Applications

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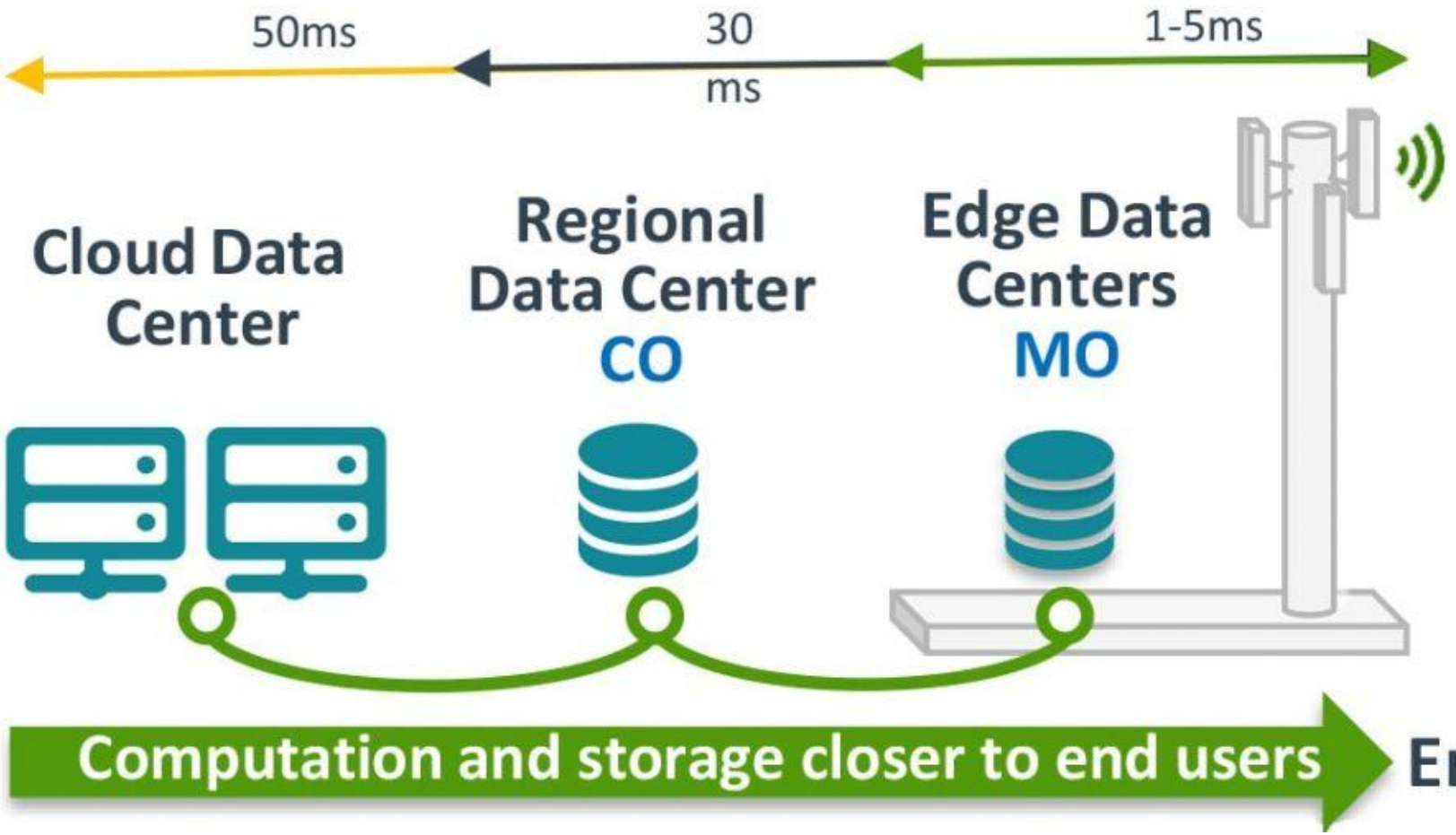
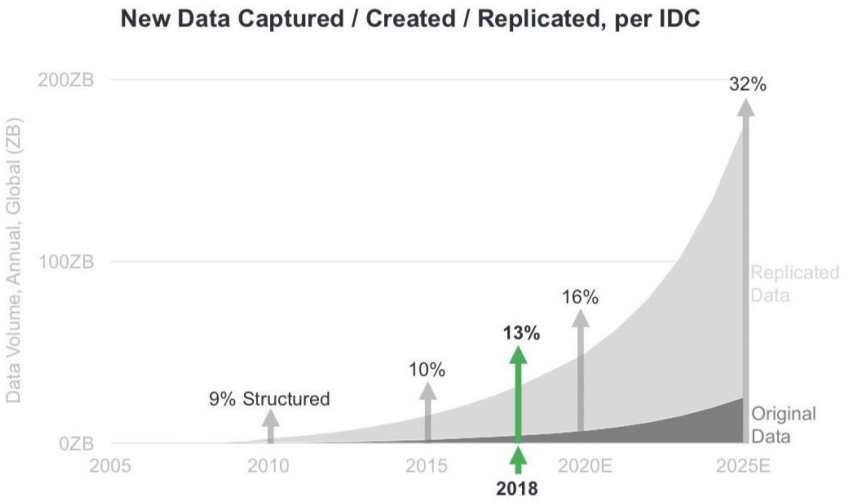
From cloud data center to regional data center

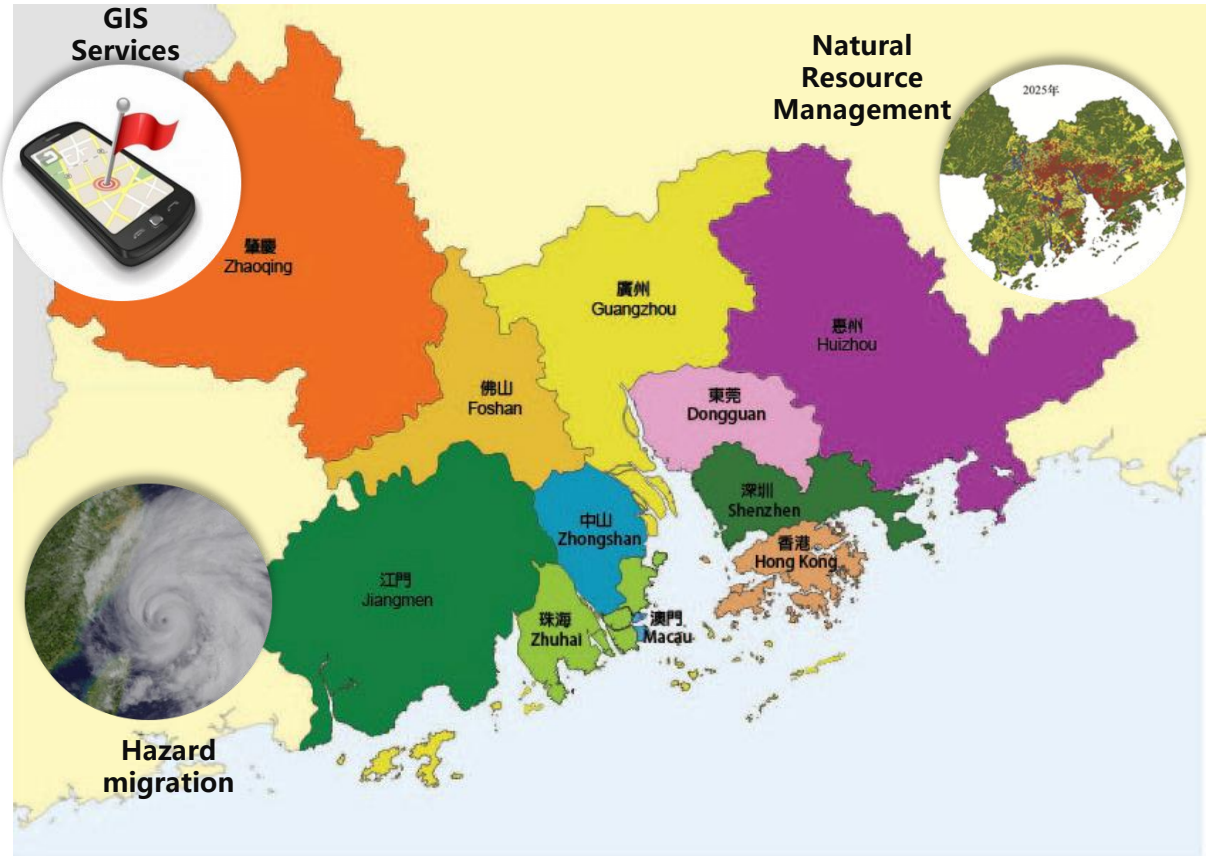




Data sharing center for GBA (Guangdong-Hong Kong-Macau Greater Bay Area)

- Guangdong Province
  - Guangzhou
  - Shenzhen
  - Dongguan
  - Huizhou
  - Zhaoqing
  - Foshan
  - Zhongshan
  - Jiangmen
  - Zhuhai
- Hong Kong
- Macau

Satellite data is valuable for comprehensive governance and the development of smart cities integrating digital government, digital economy, and digital society in the GBA. Information services and other fields have important application value.



The government based on GIS and remote sensing techniques in the GBA have been well developed. It has provided policy, software and hardware supports for the promotion and application of satellite data in government governance.

- **Weak in satellite data handling at local level;**
- **Weak in data storage, management and utilization;**
- **Requires customized data processing tools for regional applications.**

Connection with CPEOS, establish data center in GBA, providing data and analysis service for local applications

Application toolbox

Data upload

Analysis support

Data provider

API, data distribution

GBA-Data Center

Sub-branch of NODA

Public management

Task interplay & data support

Update

Submission & sharing

ARD datasets

Improve the ability of satellite data to support various government’s tasks and increase the added value of satellites.

Online service integration

- Map service for GBA
- Big data for E-government
- Cloud for government services

Management support system

- Resource management
- Ecological service assessment
- Environmental monitoring

Regional applications & major tasks

Tasks on requirement

Natural Resource Monitoring

- Resource status
- Natural res digitization
- Big earth data
- Application sharing
- Application management
- Social services

Diverse tasks

- Land survey
- Cadastral management
- Agriculture
- Natural Res

High frequency

- Data acquisition
- Data update
- Data integration

Low-frequency tasks

Ecological Service Assessment

- Ecological restoration
- Ecosystem management
- Sustainable development
- Biodiversity

Function, Value, Range, Quantity, Smarter

Fine assessment

Decision support

- Data standards
- Thematic products
- Application toolbox
- Resource Scheduling

High-frequency tasks

Environmental Monitoring & Evaluation

- Pollutant monitoring
- Environmental assessment
- Forest survey
- Mineral resource monitoring
- Water resource monitoring
- Wetland resource monitoring

Frequency: seasonal, Monthly, Realtime

- Data connection
- Data services

GROUP ON EARTH OBSERVATIONS

AGEOSS

System structures

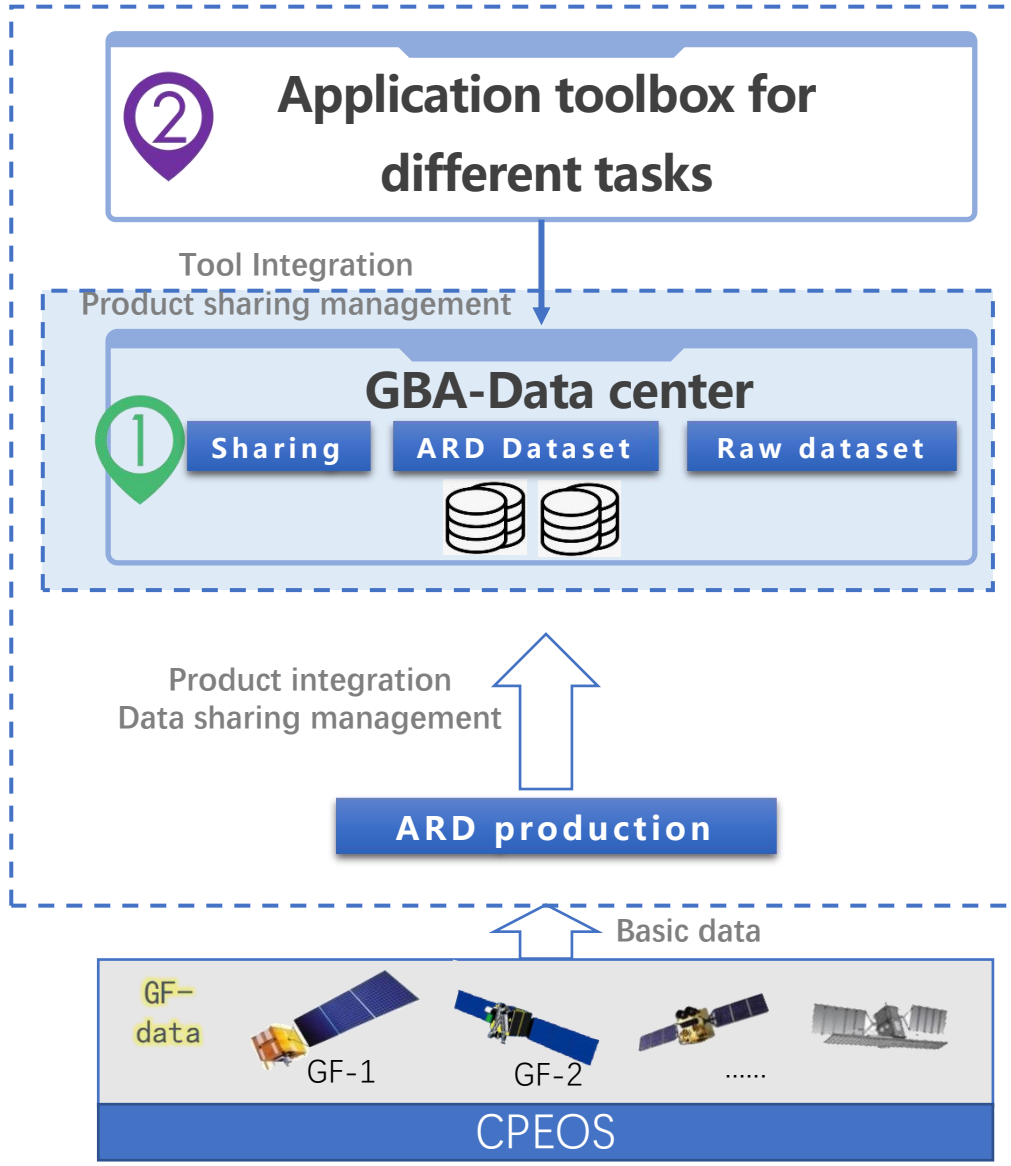
Task 1: ARD dataset for the GBA

Task 2: Application toolbox development

Task 3: Application in resource management

Task 4: Application in Environmental Monitoring and Evaluation

Task 5: Application in Environmental Monitoring & Evaluation



Service platform

Governance

- Map service
- Data support
- Big data for E-government
- Cloud for government services

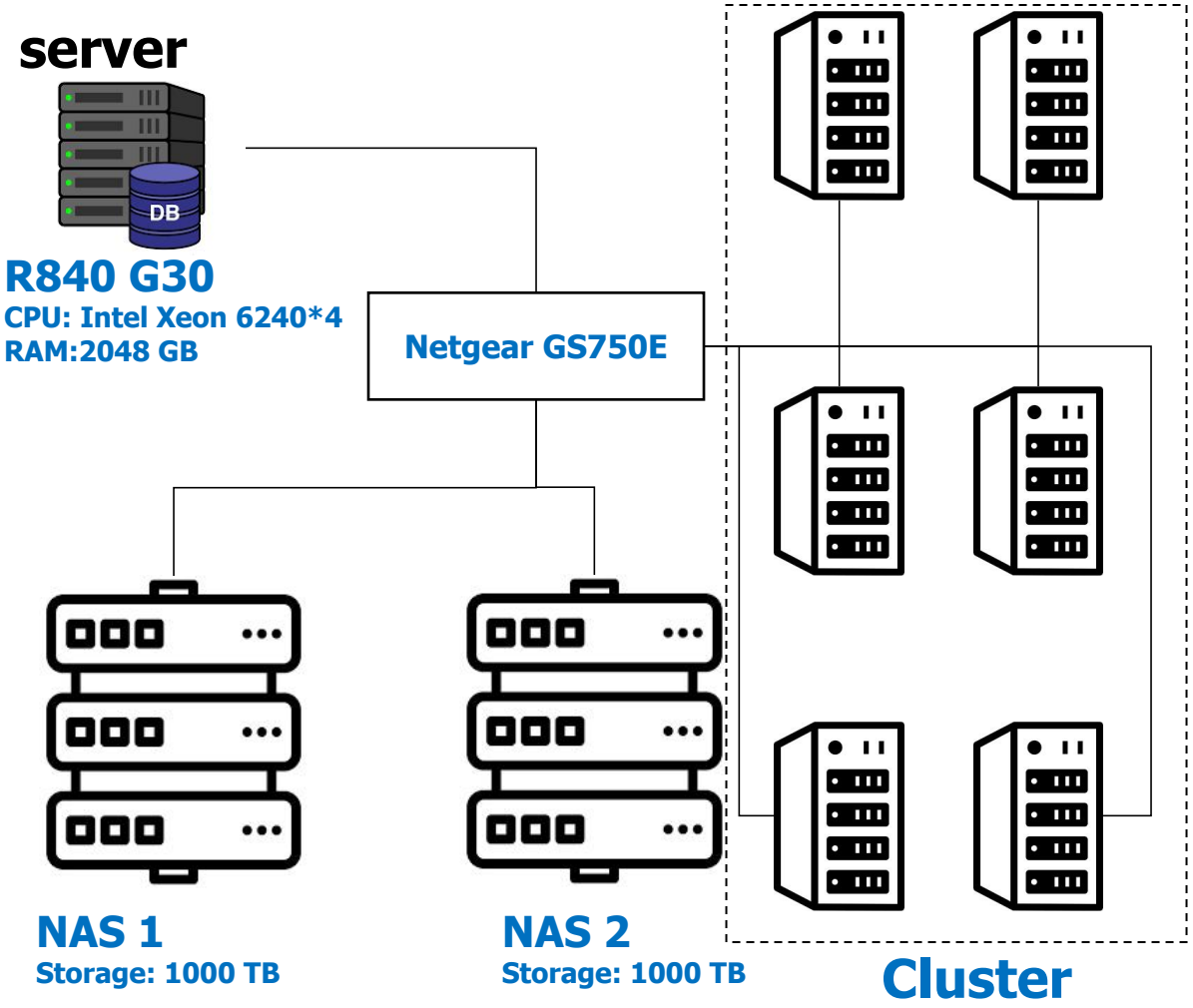
Applications

3 Resource Management

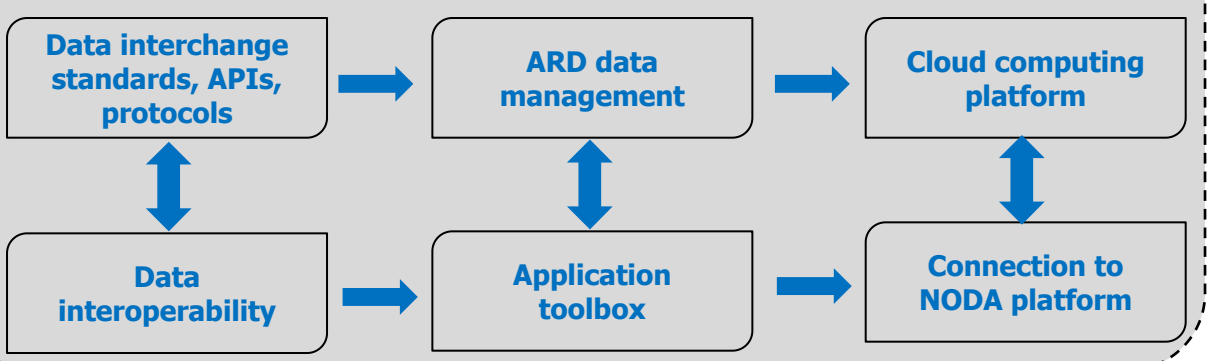
4 Ecological Service

5 Environment Monitoring

Built Computing Infrastructure in 2022



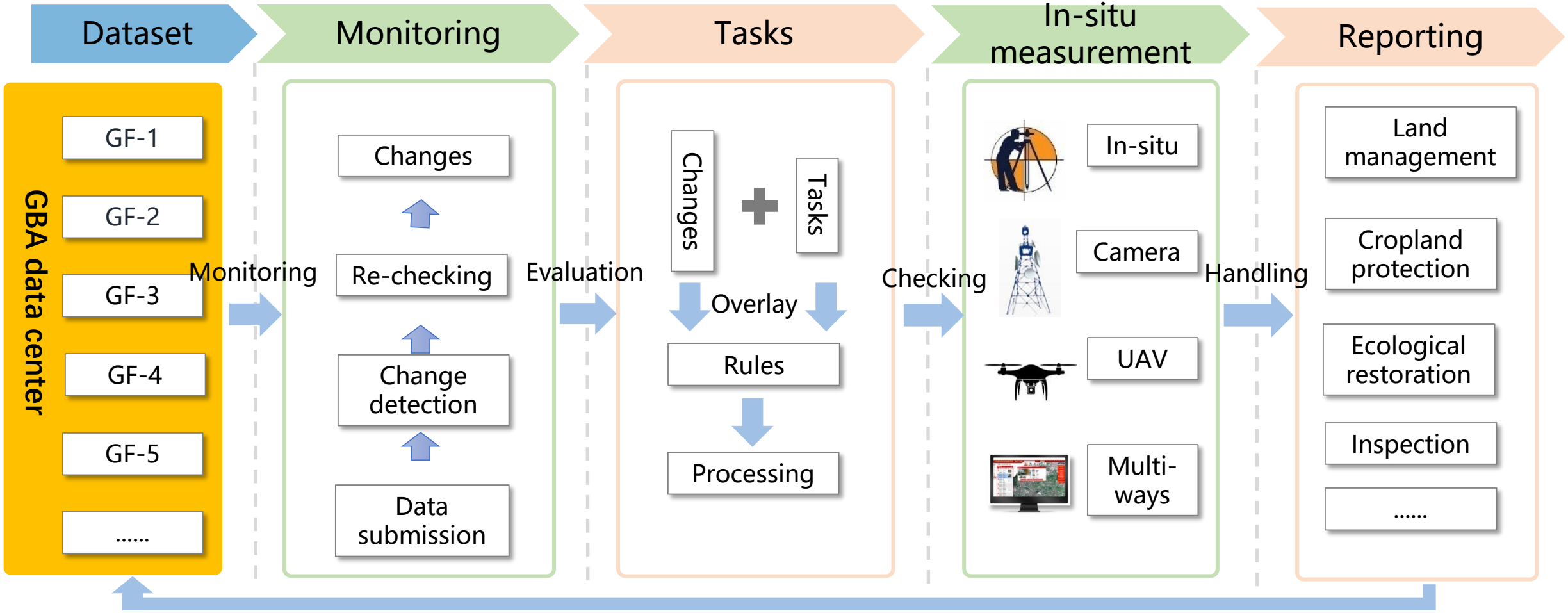
Built Prototype System Architecture for Satellite Data Management in 2022



Developed ARD data preprocessing and dataset generation techniques in 2022

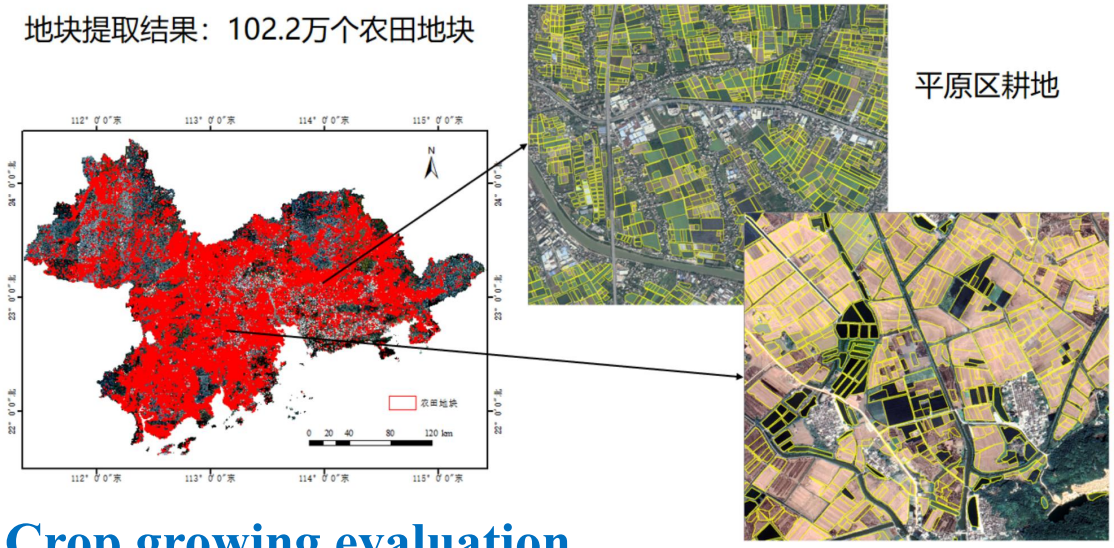
- Radiometric correction and quality improvement for multi-source satellite images
- Geometric correction and auto-mosaic for multi-scale high-resolution images

Representative application for resource management



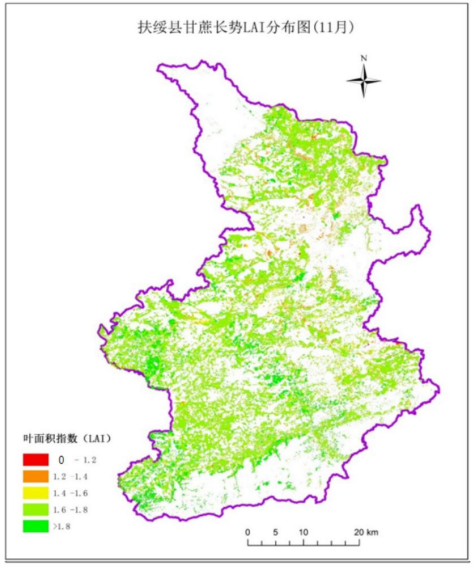
Cropland delineation

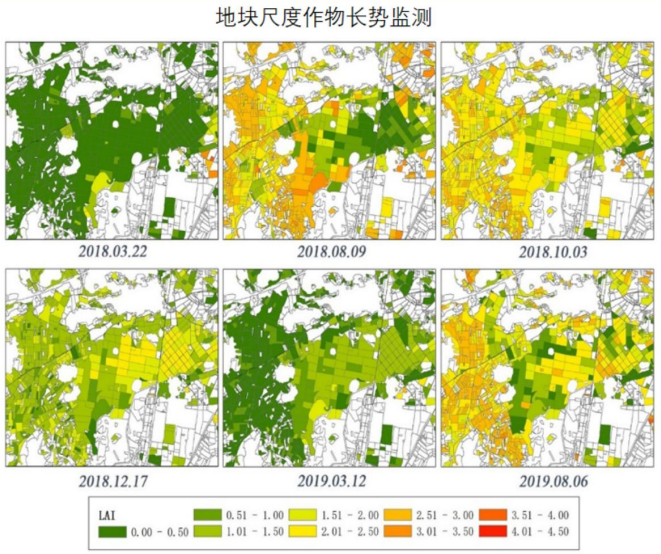
地块提取结果：102.2万个农田地块



平原区耕地

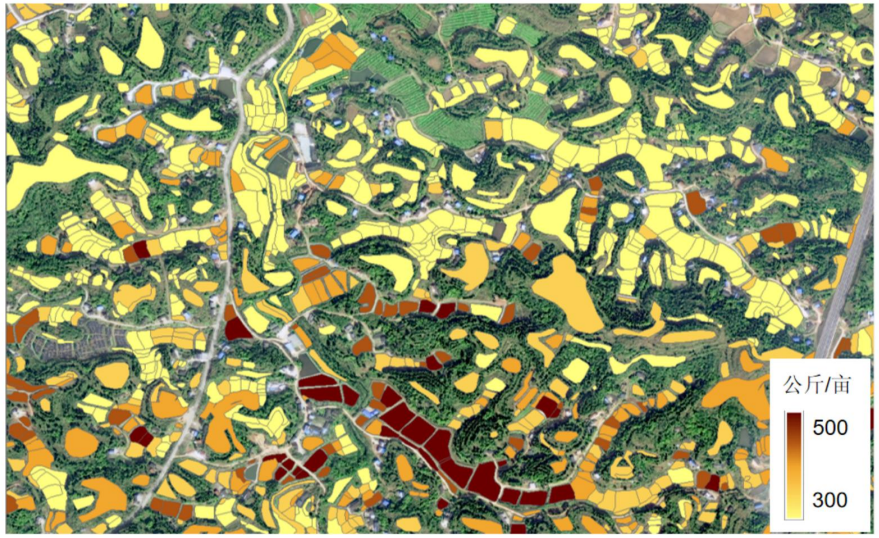
Crop growing evaluation



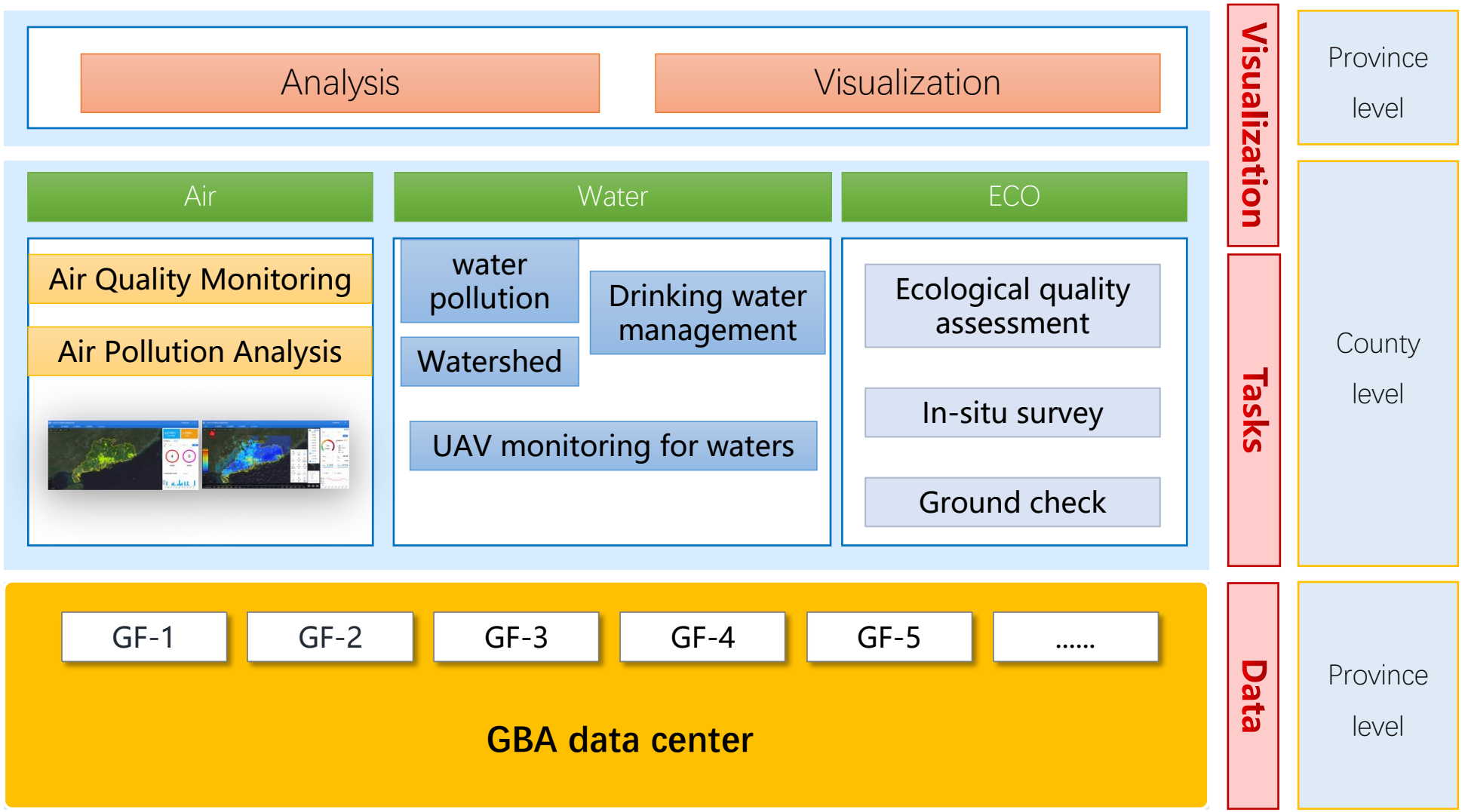


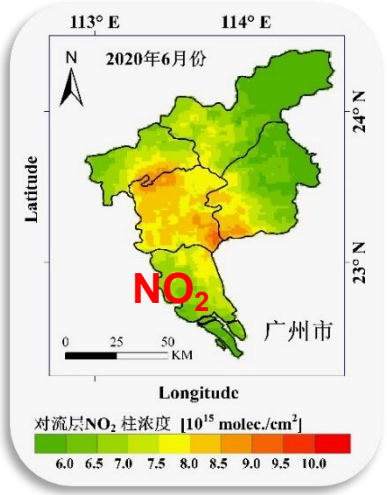
Yield prediction

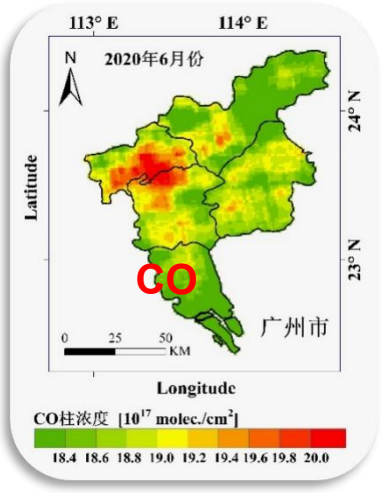
地块尺度水稻单产估算

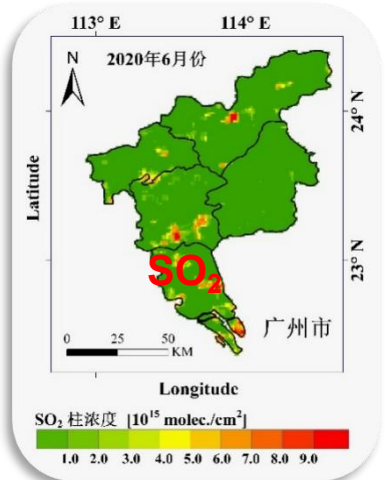


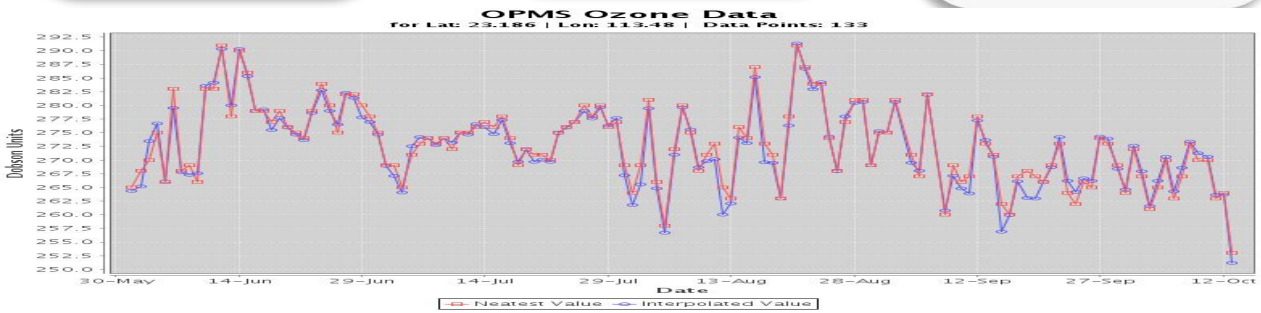
Representative application for environmental monitoring

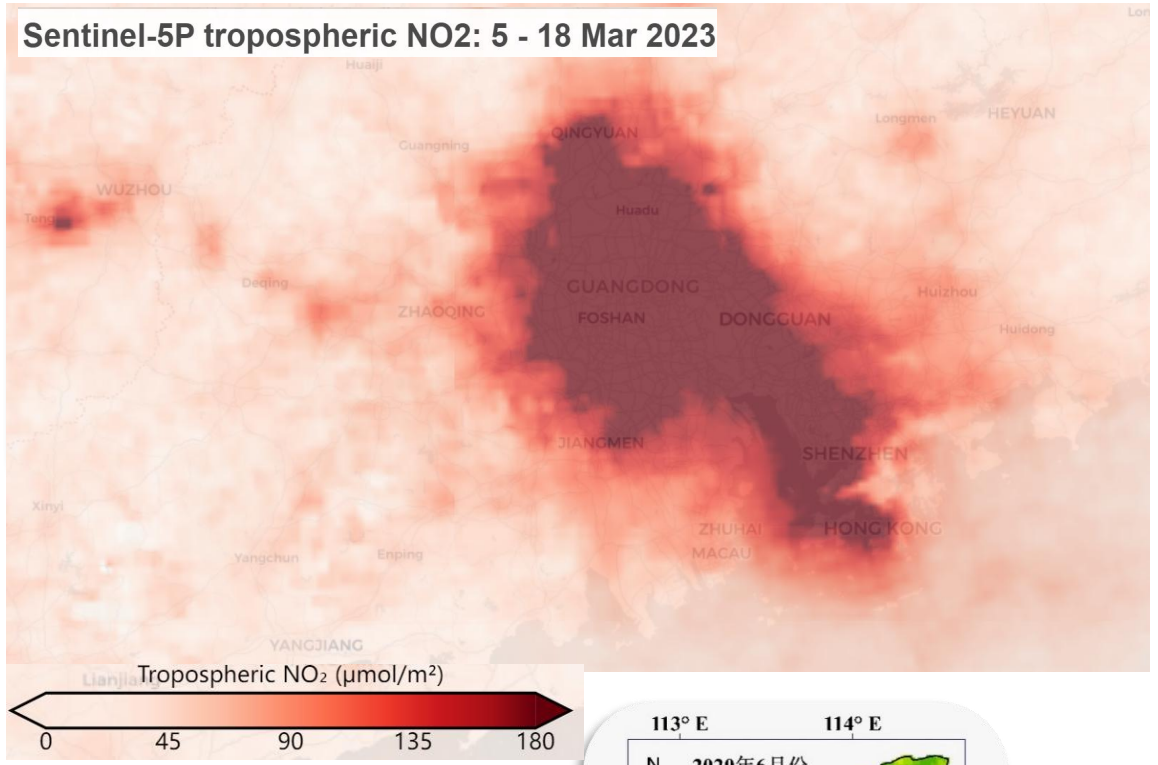




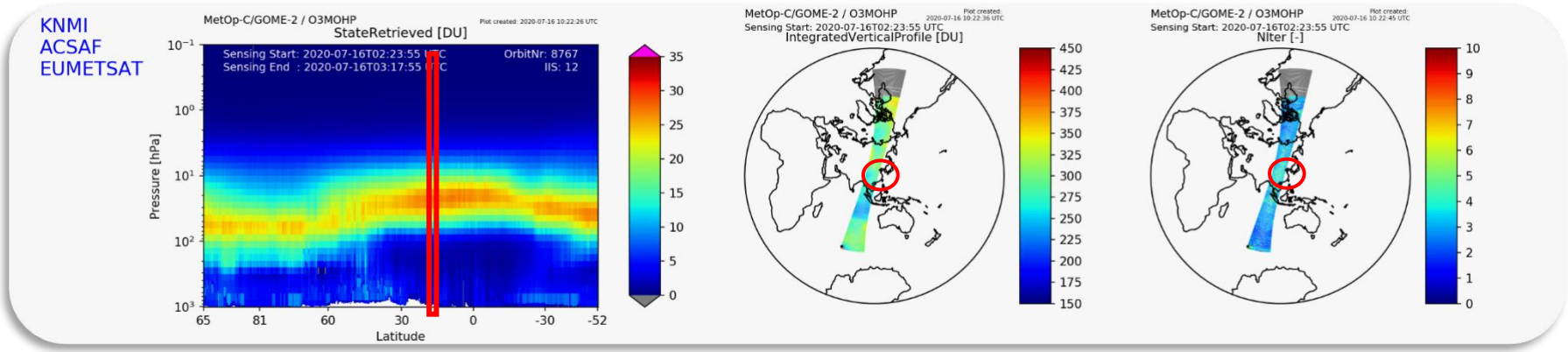


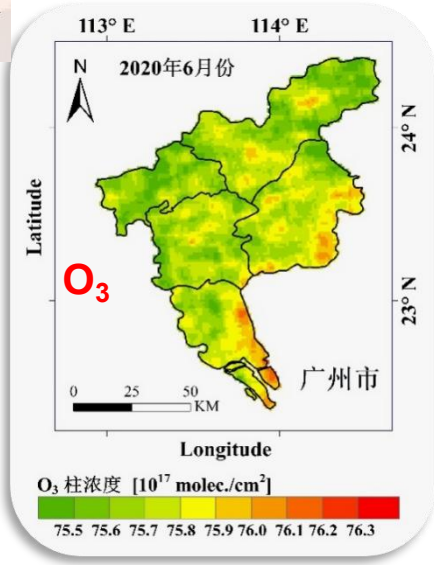


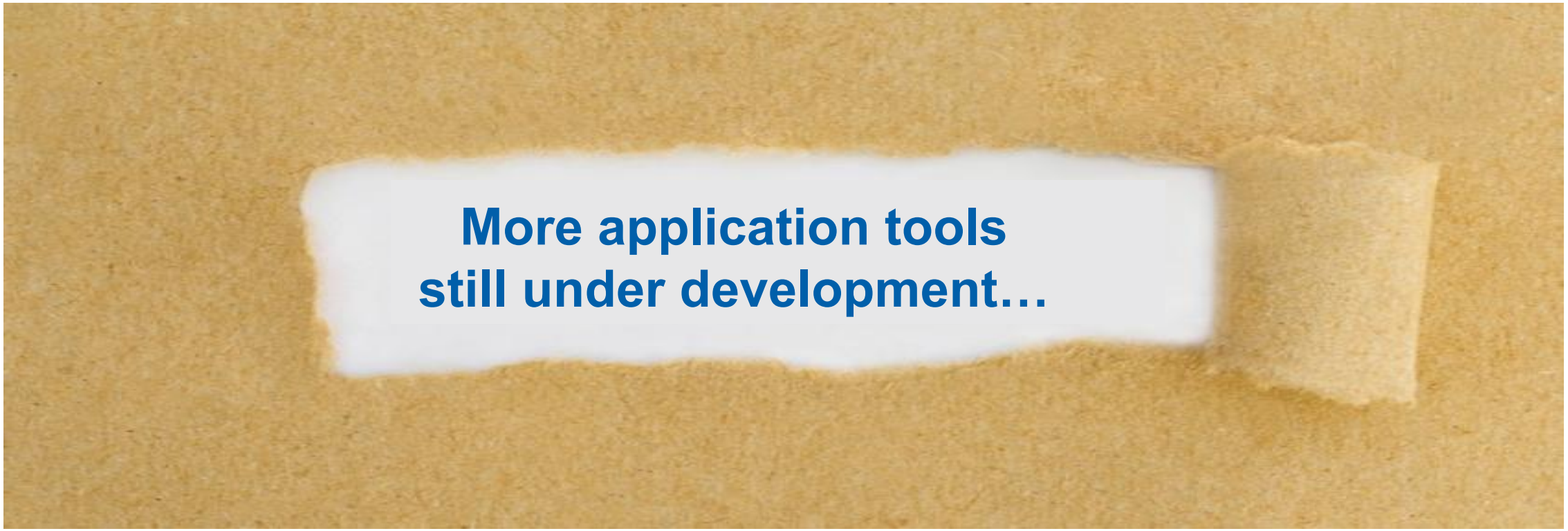




O_3 Changes in Guangzhou






More application tools
still under development…

Thanks for Watching!