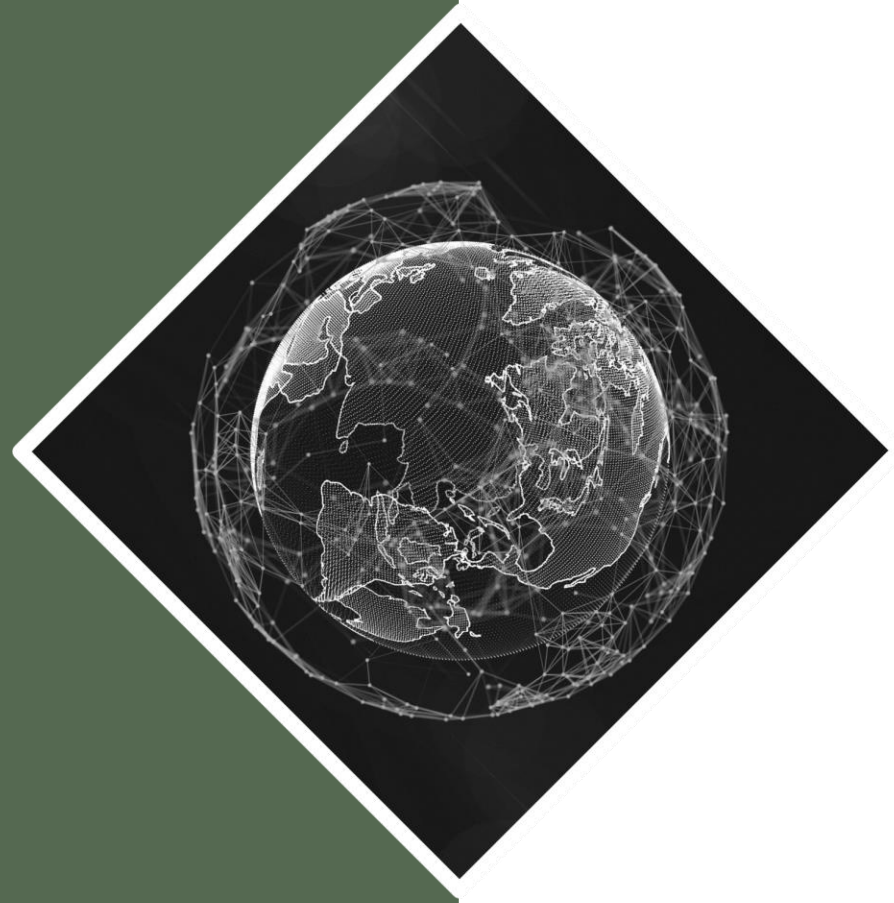
GROUP ON EARTH OBSERVATIONS

OPEN DATA & OPEN KNOWLEDGE Workshop



Jilin-1 constellation and its contribution to GEO communities

Dr. Zhong Xing
CGSTL

About Jilin-1 Constellation

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- Aiming timely, high resolution remote sensing services
- Chinese Largest Commercial Satellite Constellation
- Built, Owned & Operated by CGSTL

Overview of CGSTL

GROUP ON

CGSTL

- Founded in 2014
- The leader of Chinese new space companies
- The only All-Industry-Chain Satellite Company in China

Payloads & satellites' manufacturing

Remote sensing images delivery

Value added information services

Overview of CGSTL

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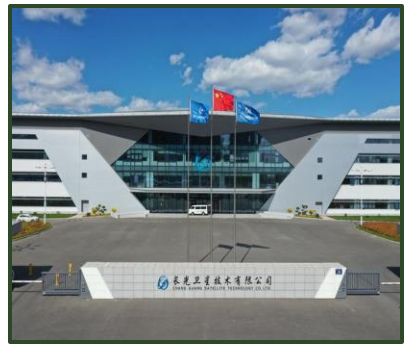
Young Company, with a Long History



Founding of CGSTL

NOW

Jilin-1 Constellation Construction

2015.10

First 4 satellites launched

2014.12

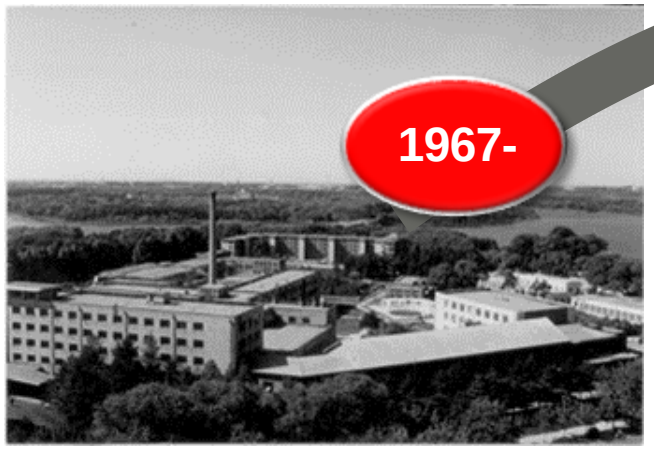
2007-2014

Satellite development

2006

Started development of payload-centered satellite

1967-



CIOMP Developed the very first Chinese Space optical payload, in Chinese Academy of Science.

Overview of CGSTL

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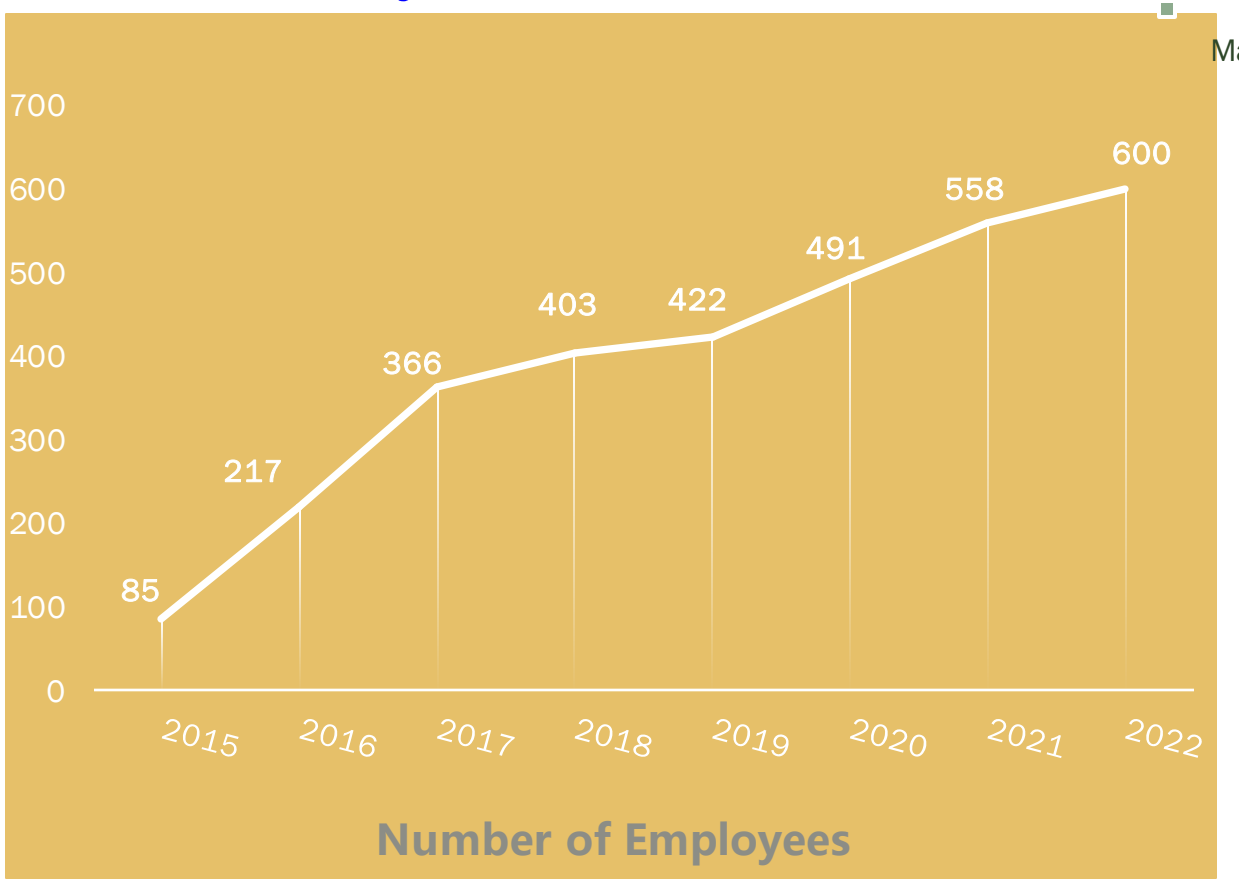
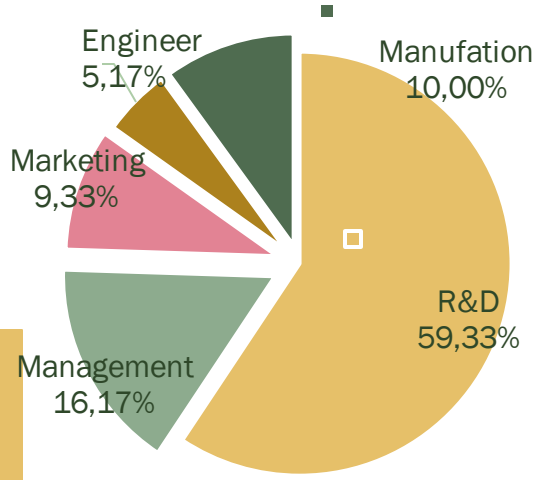
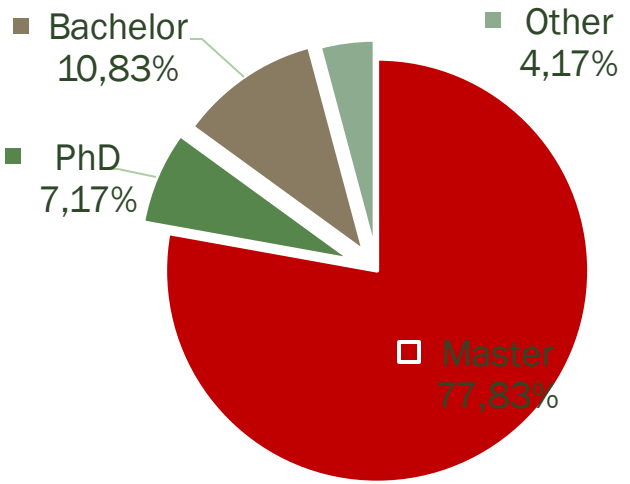
Young & highly educated team

- Total number of employees: >600
- Masters and PhDs >85%
- Under 30 years old >62%







Overview of CGSTL

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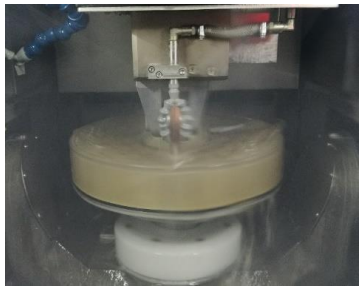
Payload Developing

- Advanced mass production line of aspheric mirrors:
- Spec: RMS＜6nm， Ra＜2nm
- Grinding, Polishing, Ion Beam Figuring
- Precise Optical Alignment
- Optical Imaging Quality Test
- Pre-launch Calibration



Satellite AIT

- Table test & Simulated Flight Test
- All Environmental experiments
- Solar panel deployment test
- Inertia characteristic test
- Radio Test
- EMC Test
- Magnetic test
- ……

Satellite Production Line

- A mass satellite production line has been initially formed, with an annual capacity of 100 satellites

Satellites R&D Achievements

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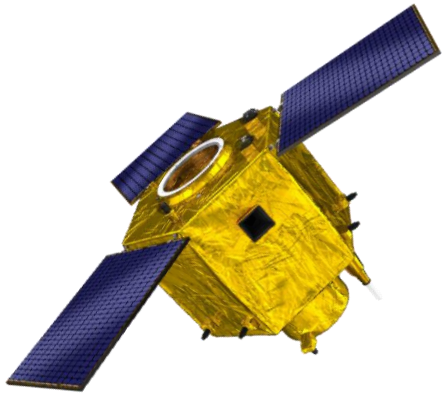
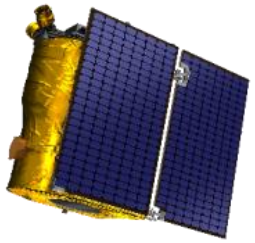


Optical A

1st generation:

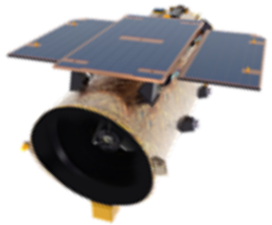
Payload Centered



GF03

2nd generation:

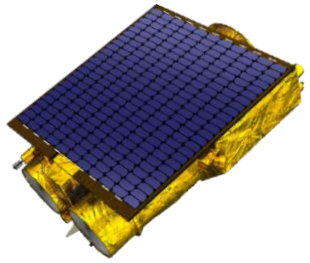
Payload Integrated



GF04

3rd generation:

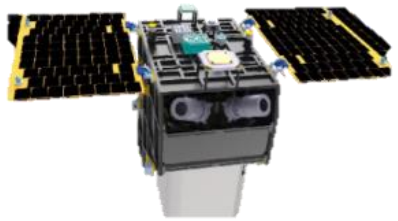
Platform-less



SP04~08

4th generation:

Deep fusion of all components

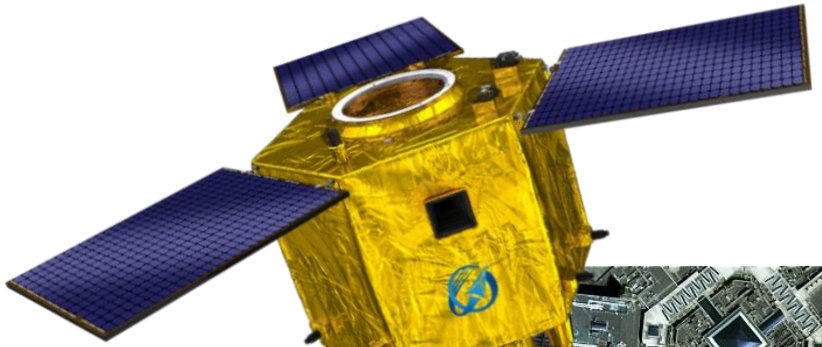


GF05

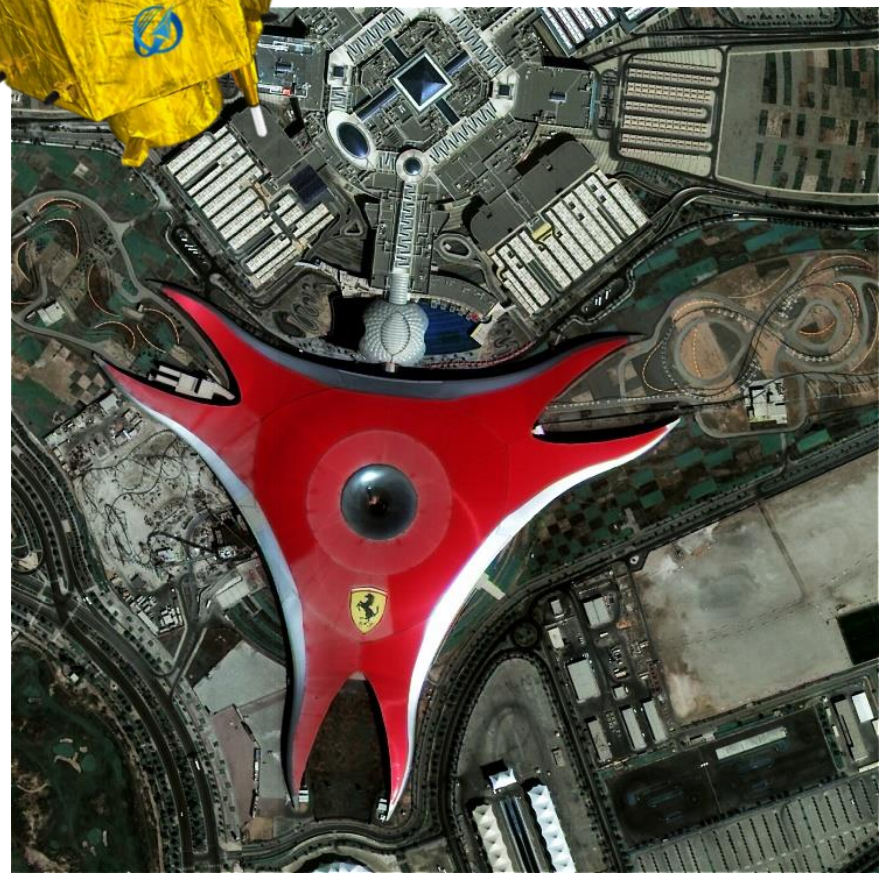
More compact, More low-cost, More powerful

Satellites R&D Achievements

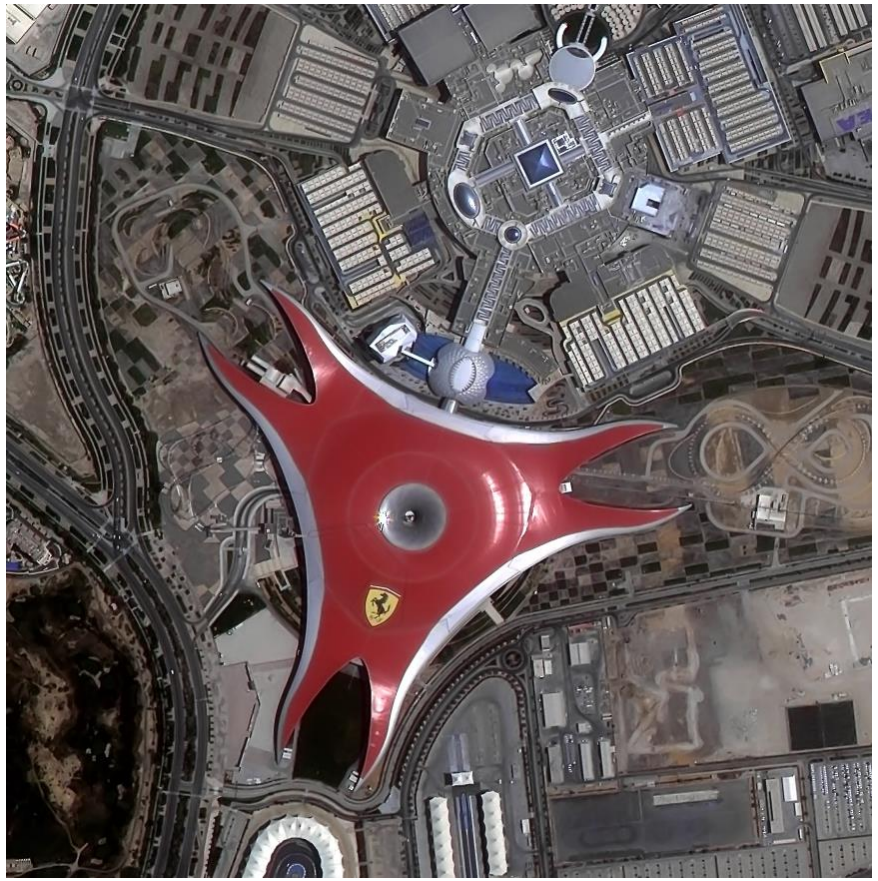
GROUP ON EARTH OBSERVATIONS



2015
Optical A
420kg



2019
Jilin-1GF03
<45 kg
10% COST



Satellites R&D Achievements

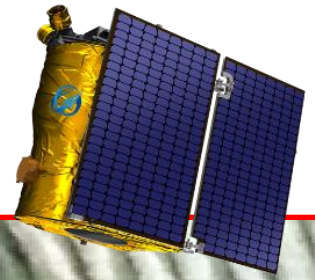


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Image of CGSTL's 45kg satellite

JL1GF03D02 image Kalama Mine, July 3, 2021

Satellites R&D Achievements

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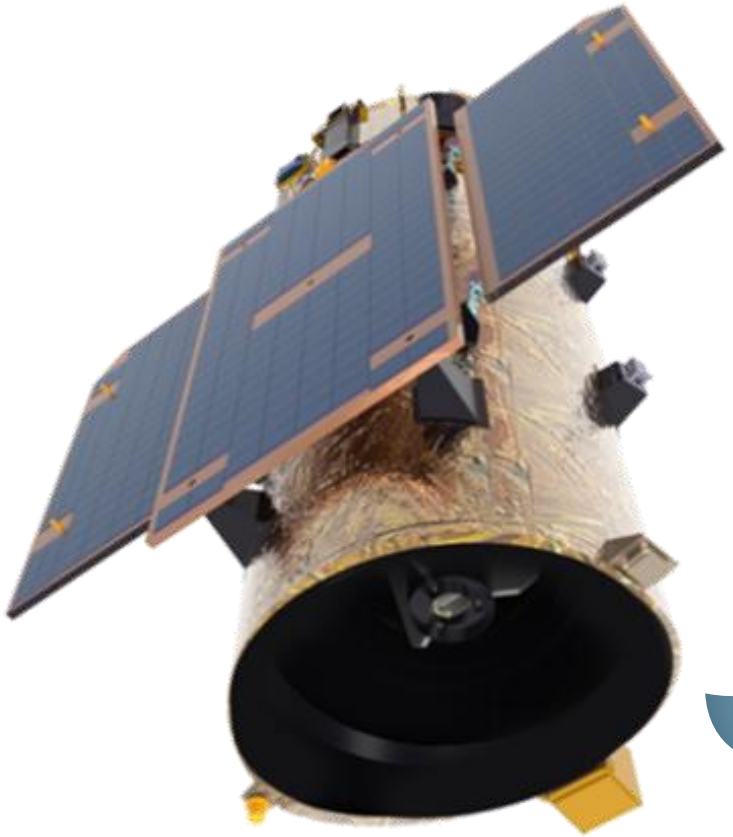
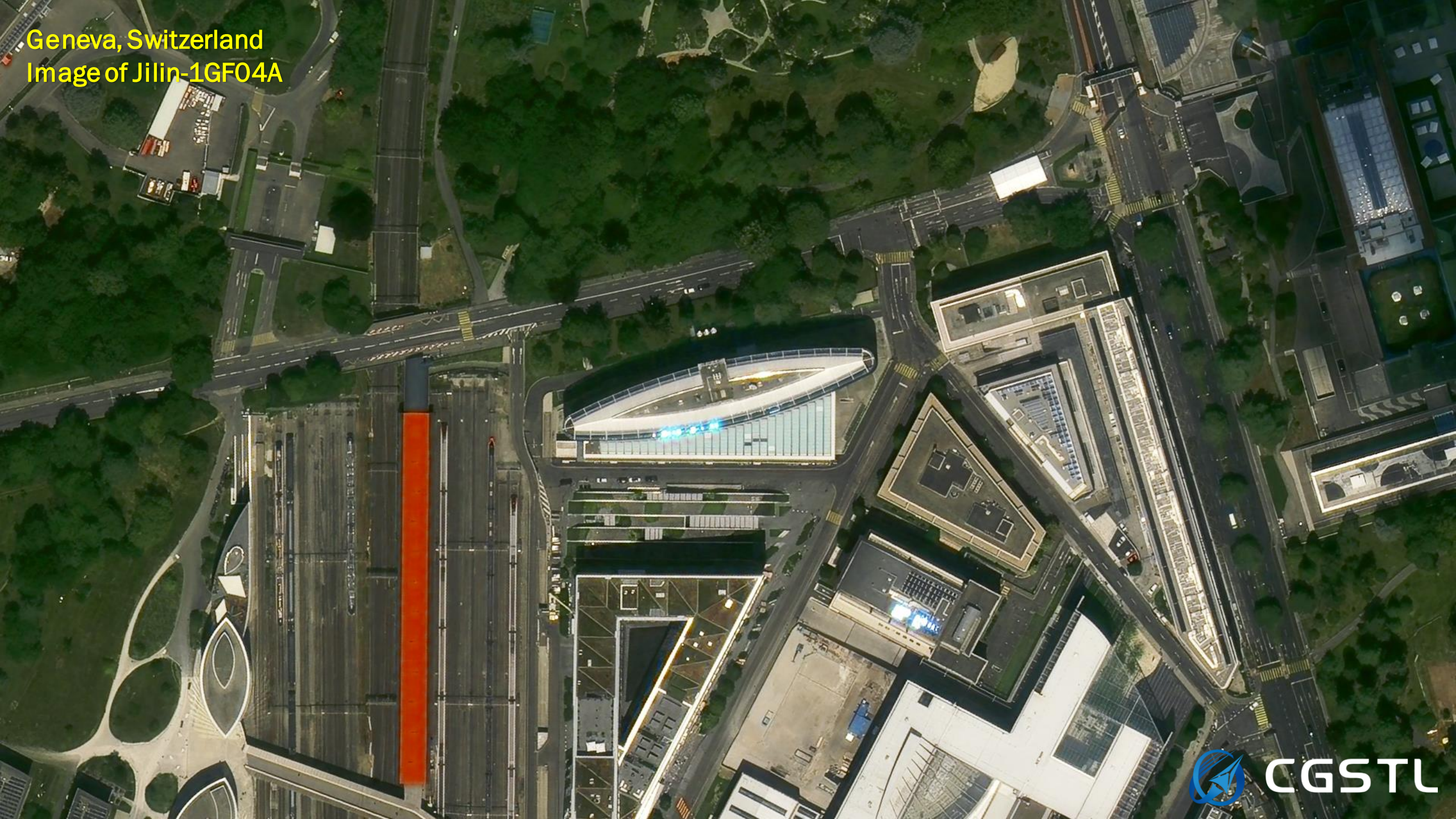
GF04A



World's lightest Operational VHR satellite
With only 92kg


Geneva, Switzerland
Image of Jilin-1GF04A
CGSTL

Satellites R&D Achievements

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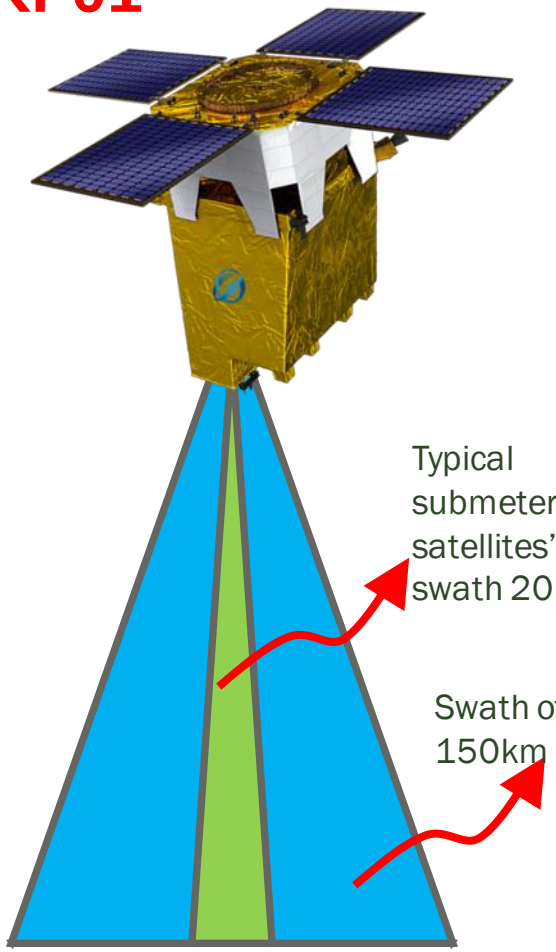
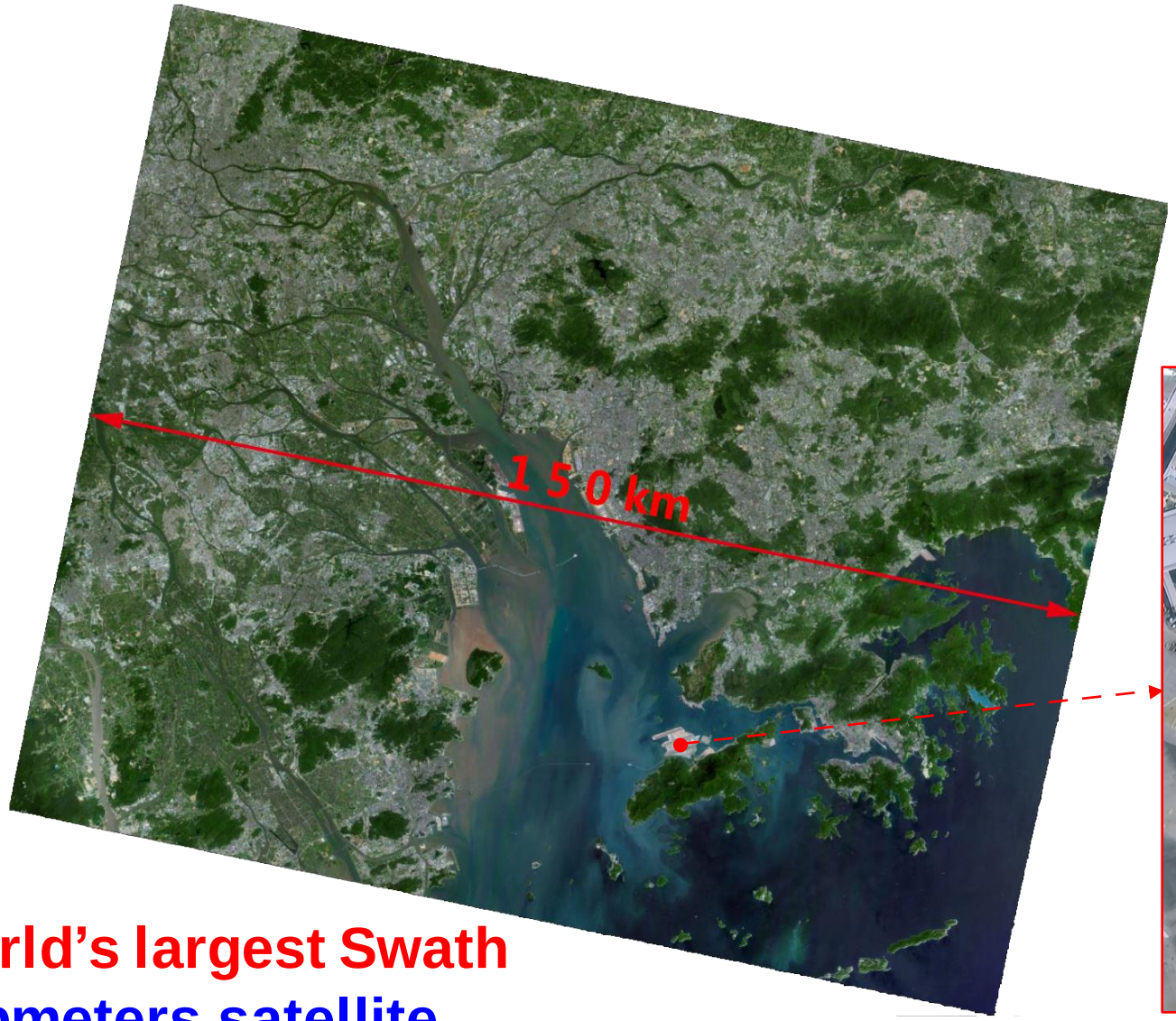
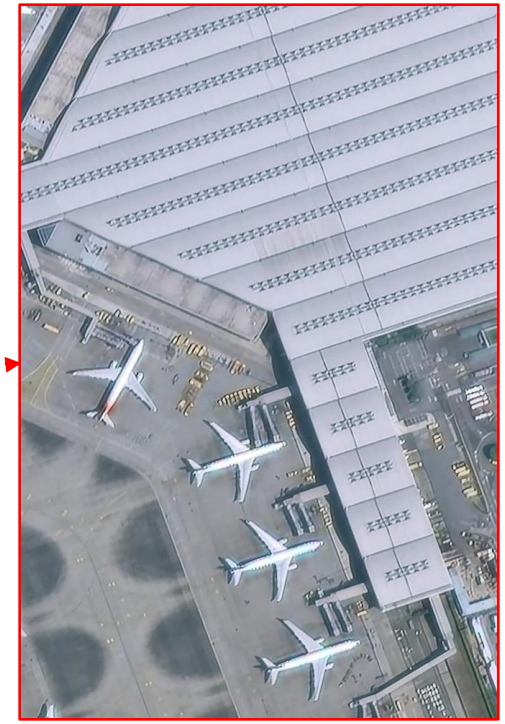
KF01





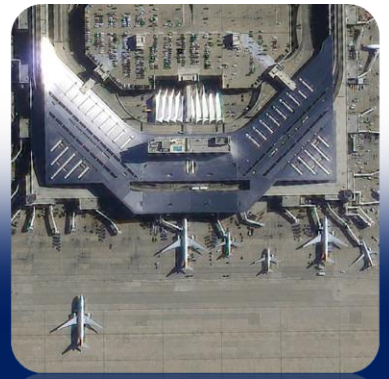


World's largest Swath submeters satellite

Data Products

GEO GROUP ON EARTH OBSERVATIONS

VHR, <0.5m



0.5m

0.75m

1m

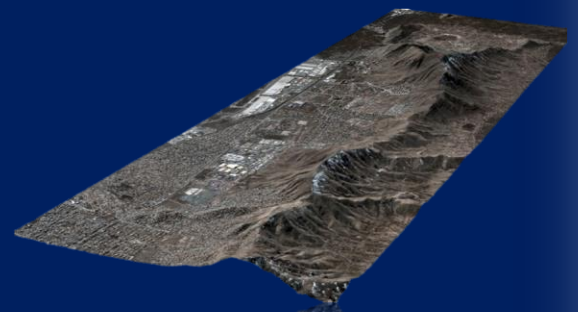
5m Multispectral

20 channel

Standard Push-broom Data Product

Video

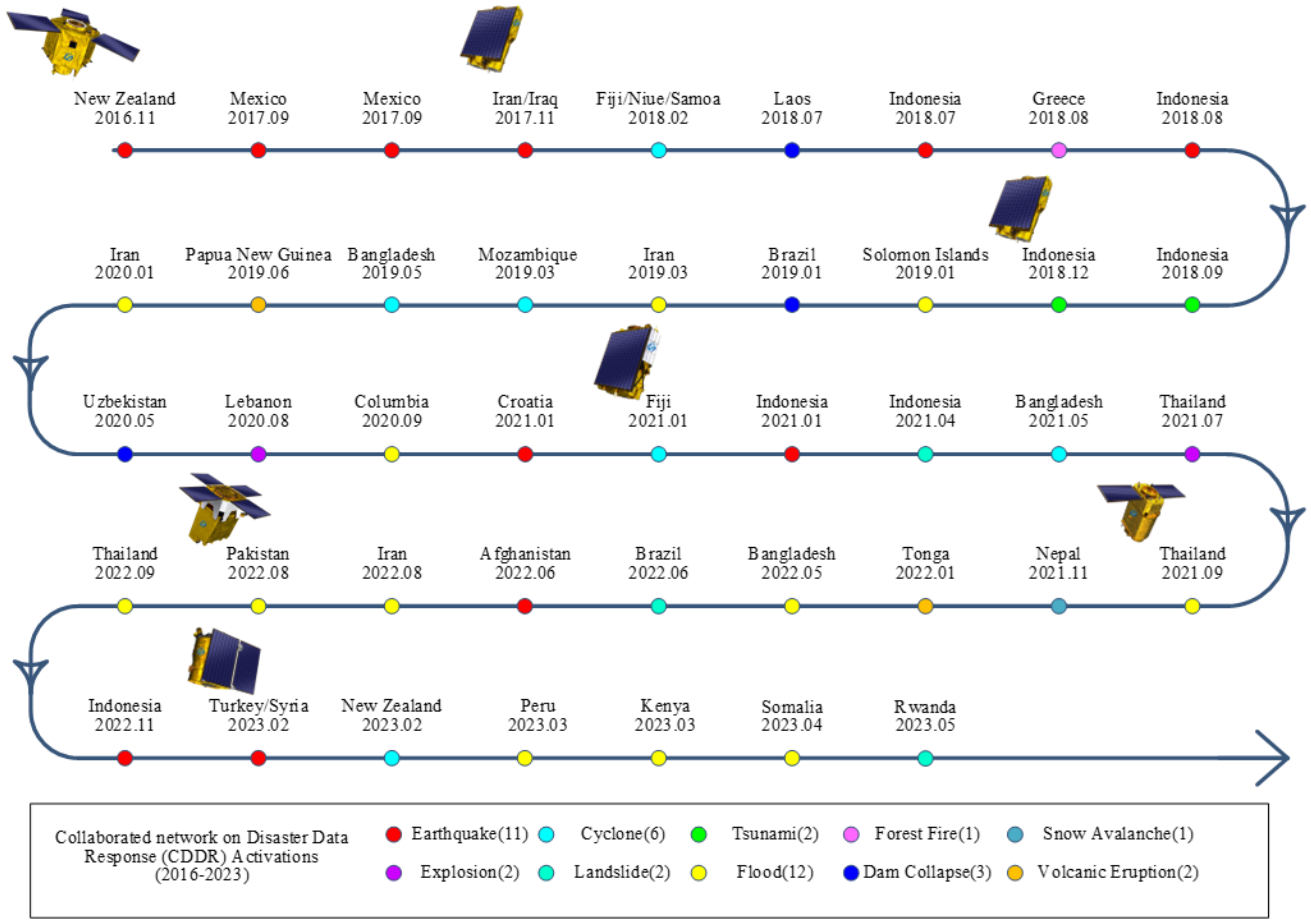
Nighttime

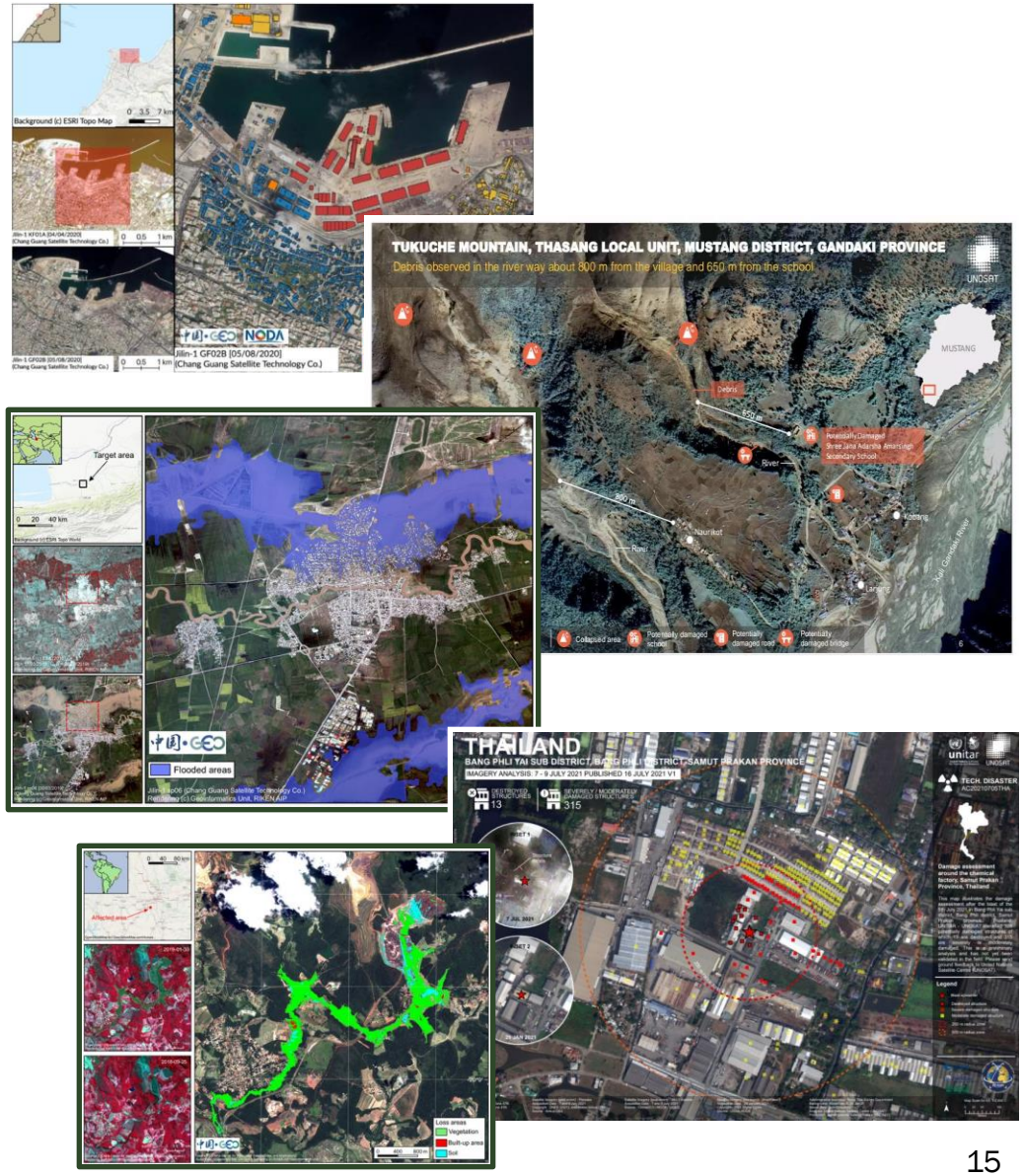


DSM

Characteristic Data Product

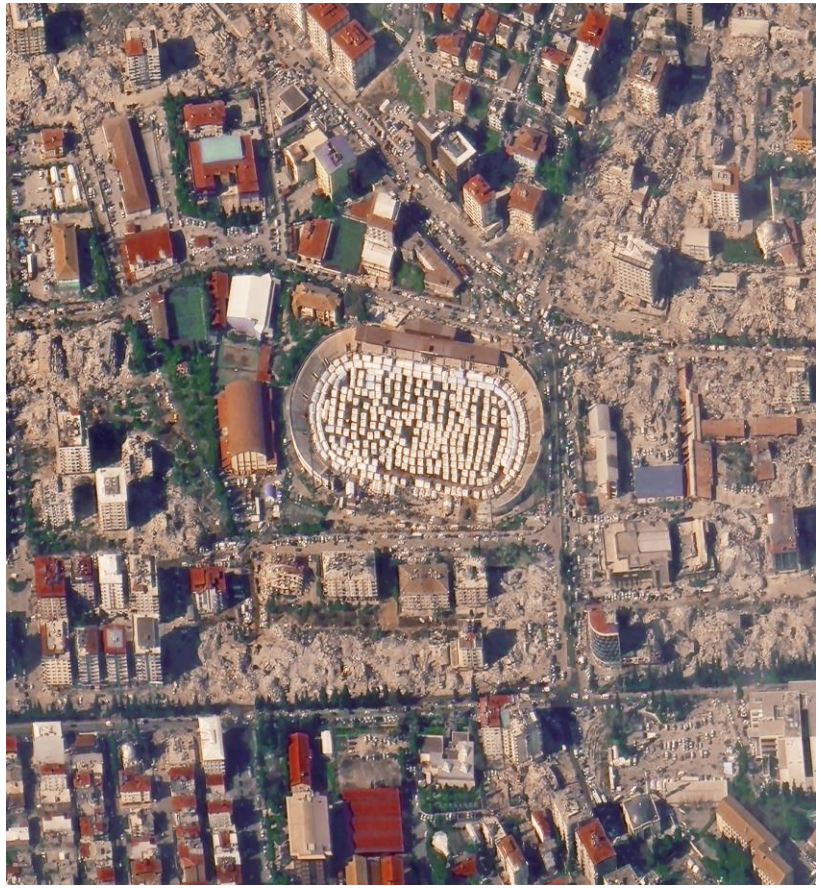
GEO Related Actions



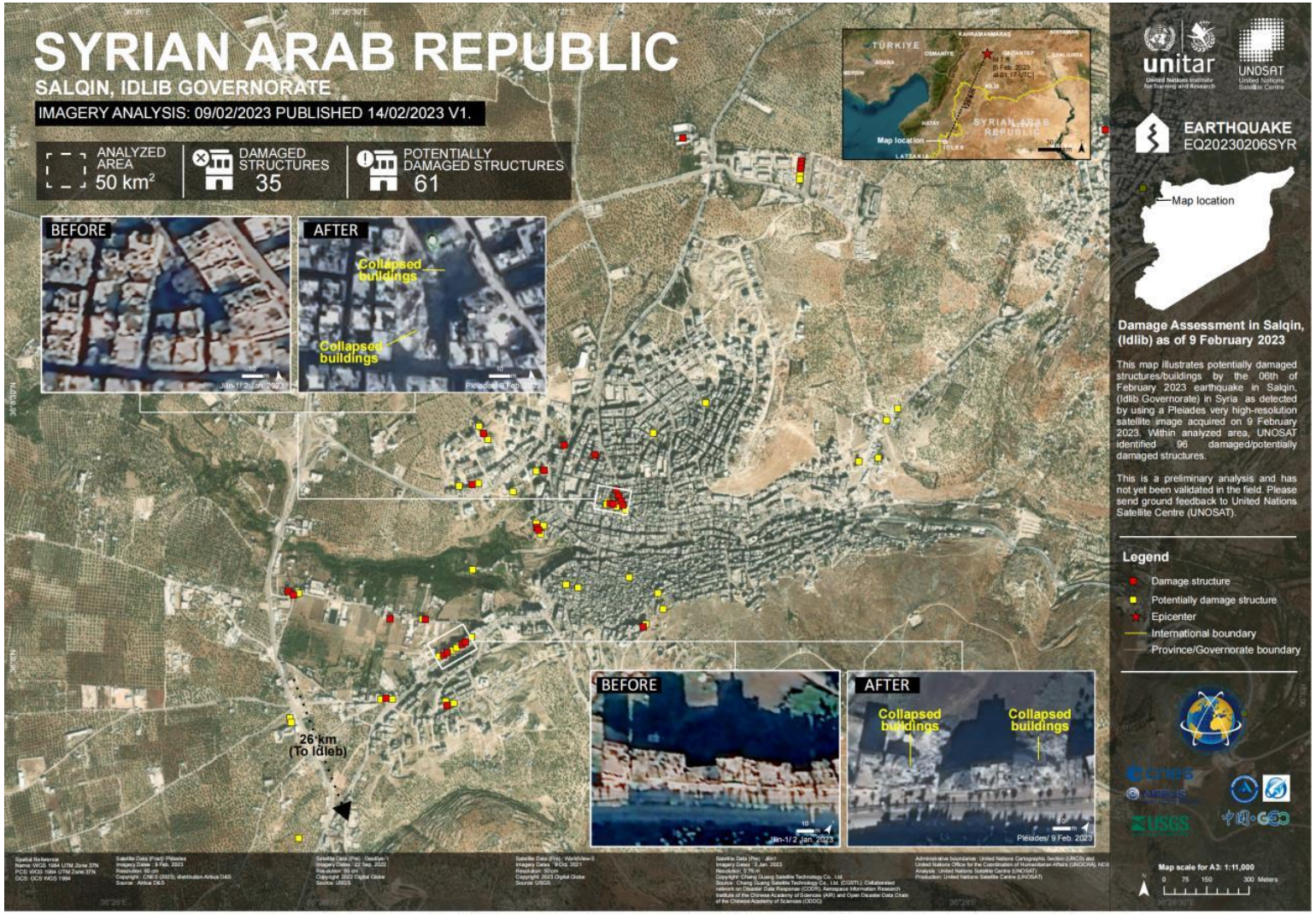


In China, CGSTL is the dominated VHR data contributor to GEO disaster activities

GEO Related Actions



Turkey-Syrian Earthquake 2023



GEO Related Actions

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Floods Disaster in Africa 2023

Images from 20+satellites, 13 scenes archived, 58 scenes newly acquired

Dataset Development & Sharing

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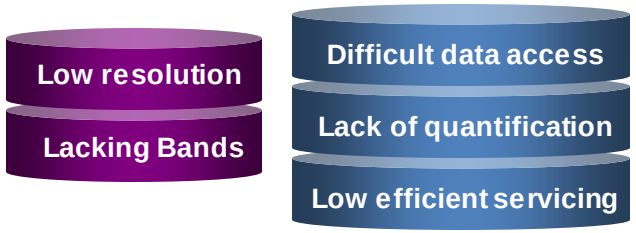
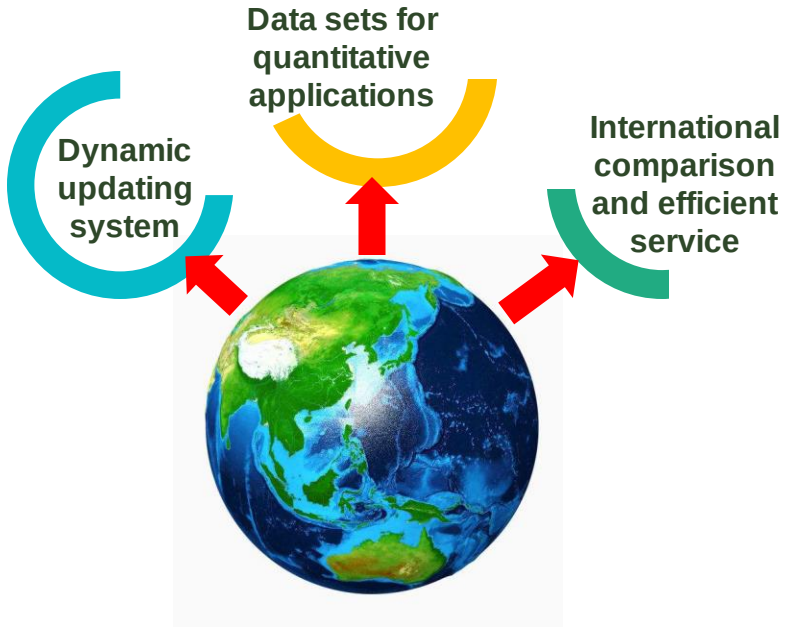
User needs:

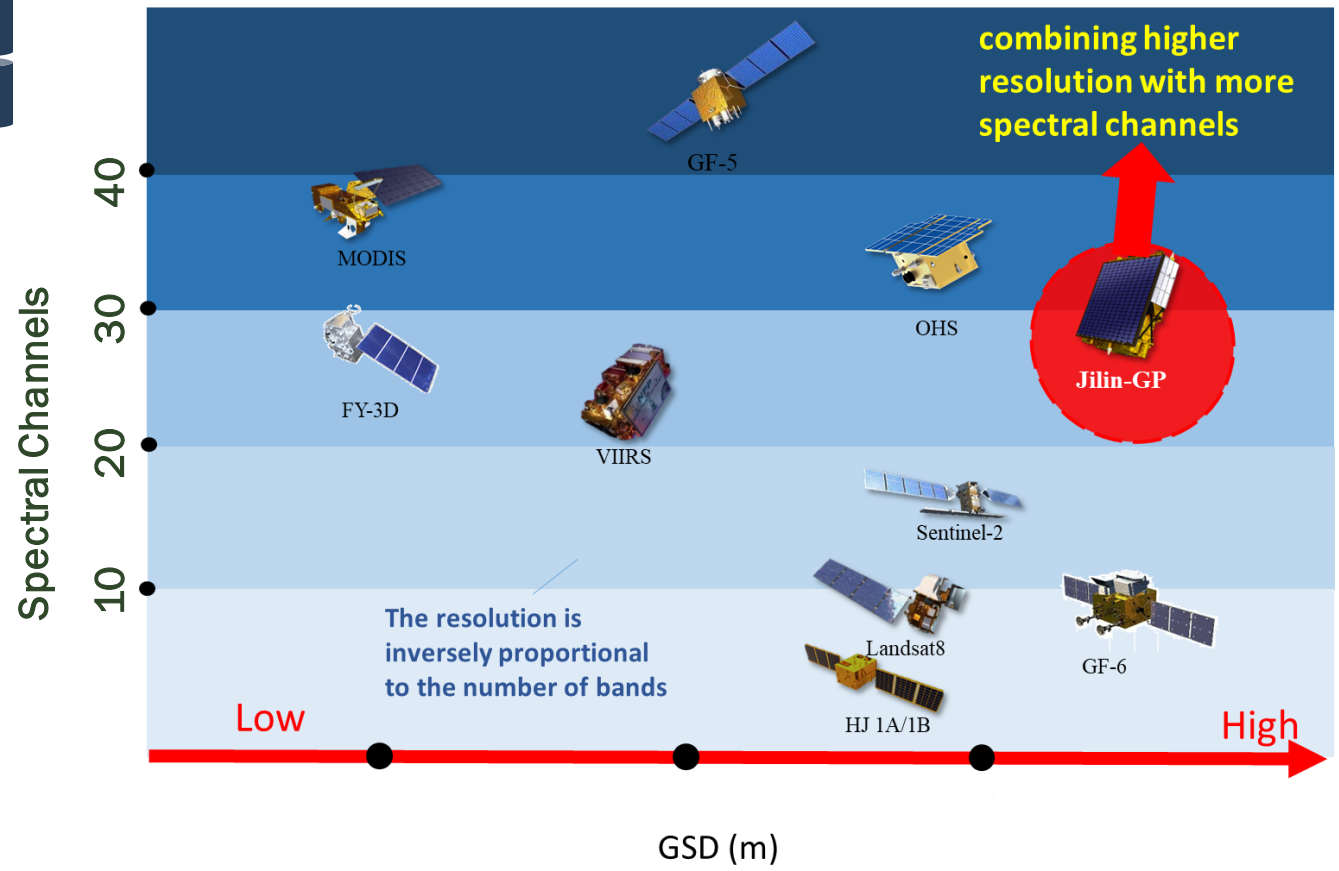
- Dataset Resource
- Persistent Quality
- Sharing Service

Current status:



Technical considerations:





Dataset Development & Sharing

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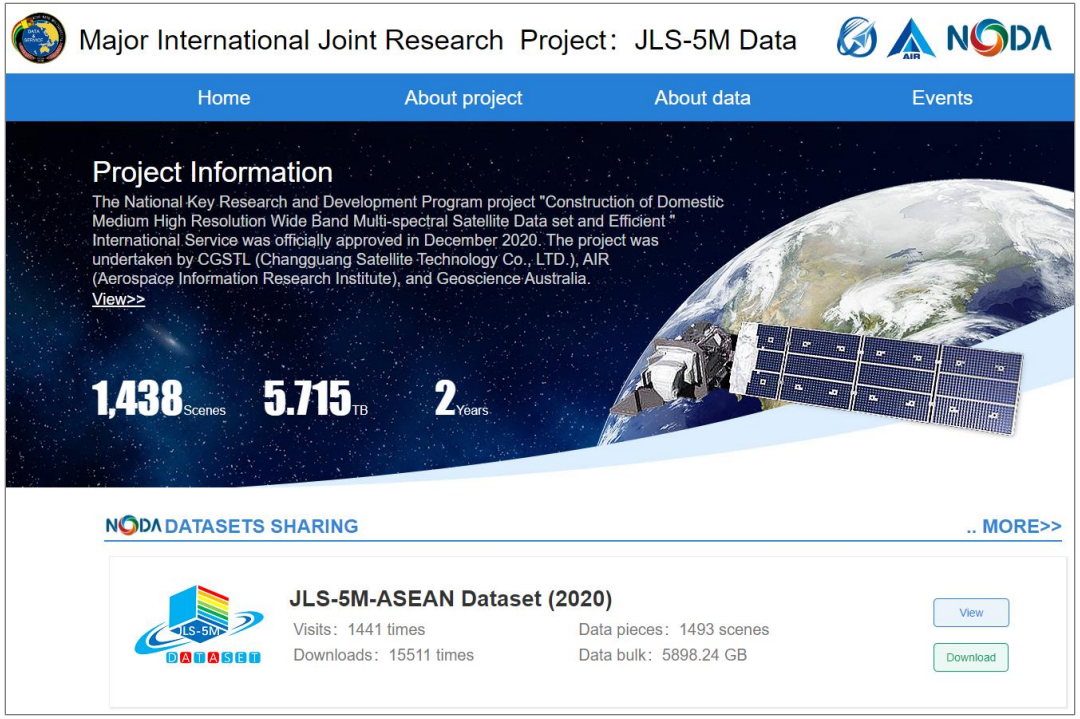
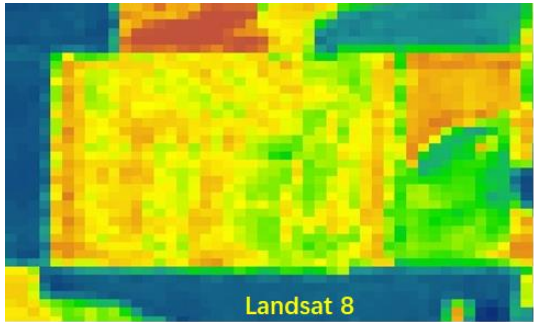
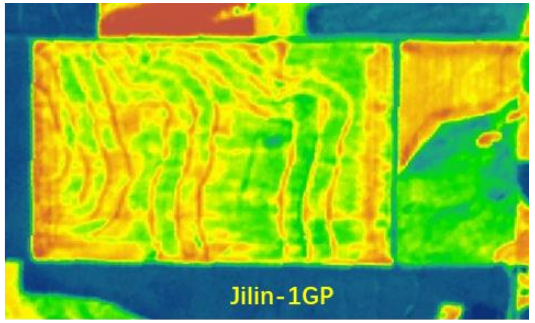




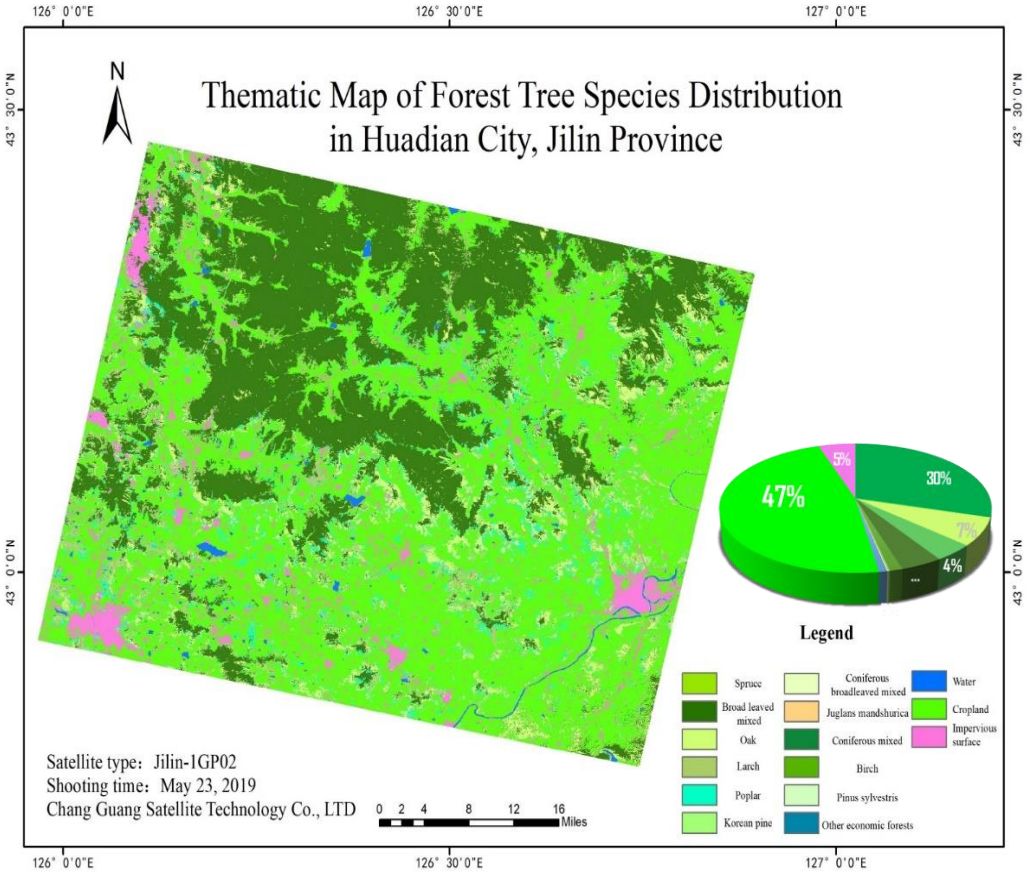


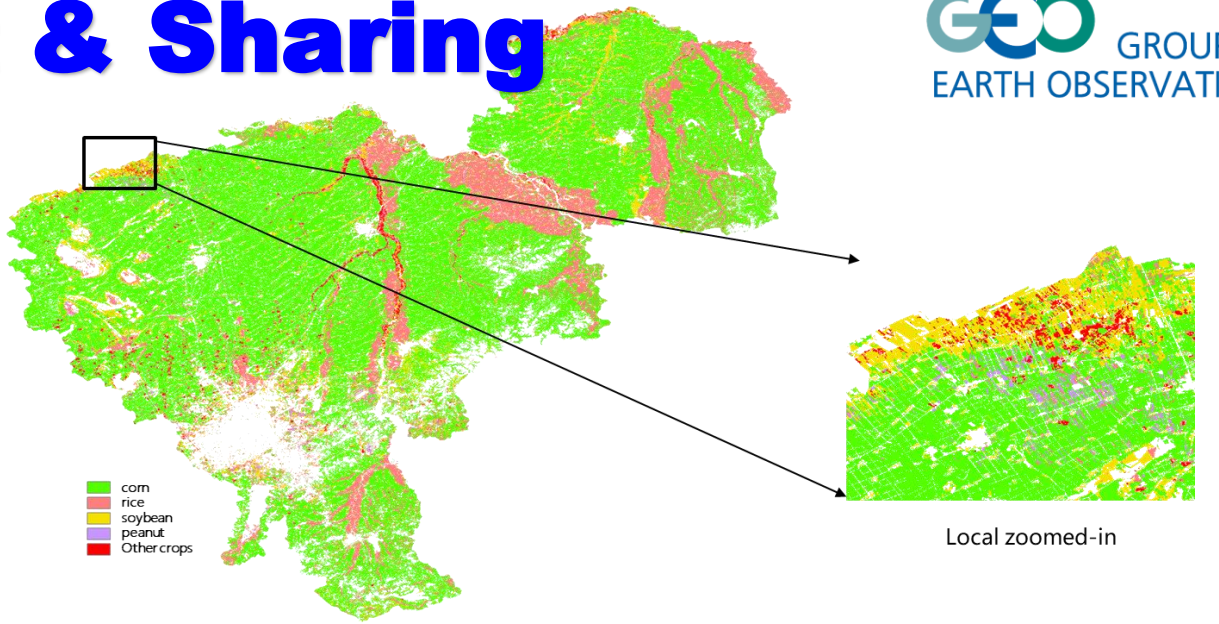
- Developed by CGSTL leading team
- Developed using data from Jilin-1GP multispectral satellites
- The first 5-meter wide-coverage dataset with 20 multispectral bands
- Provided to all communities through ChinaGEOSS

Dataset Development & Sharing

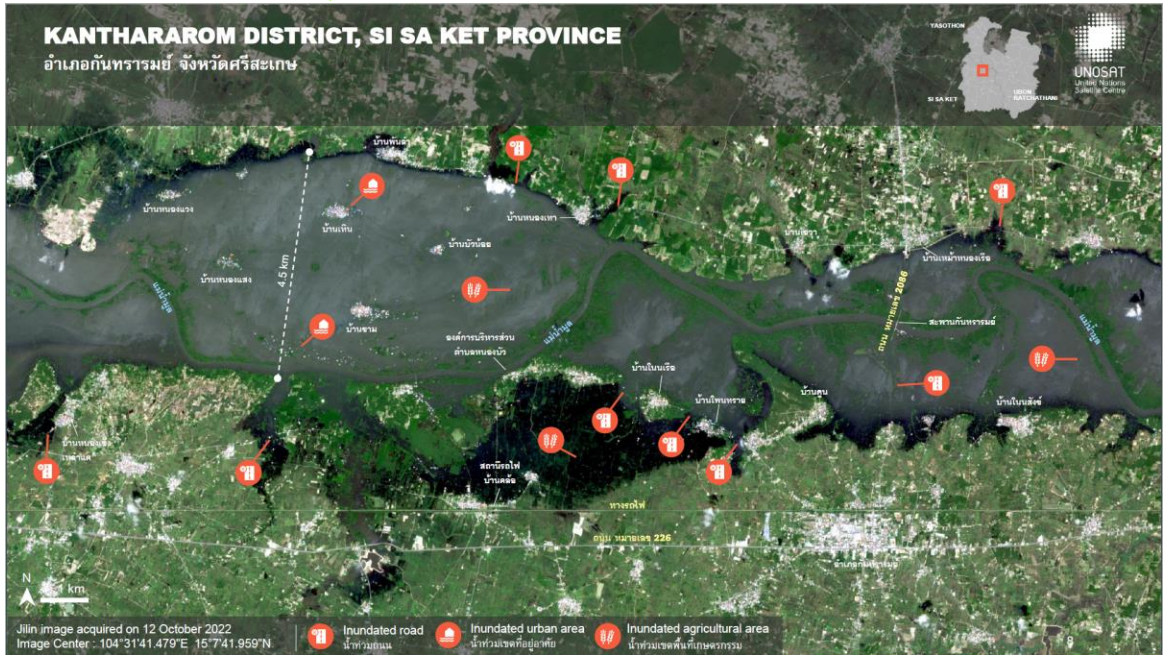
GROUP ON EARTH OBSERVATIONS

Dataset Application





Local zoomed-in



Dataset Development & Sharing

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Dataset service system

Introduction page of JLS-5M dataset

Welcome to register to download!

https://www.chinageoss.cn/datasharing/theme/viewThemeById?id=JLS5M

Suggestions

- Official Ranking & Encouragements for Emergency Data Contributors

- Improved Public Calibration Services under GEO Cooperative Framework

- Communication Mechanisms and Channels Between Data Contributors and the End Users

- Supporting Project of Outdated Archived Data Sharing for Research

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Thank for your attention

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