

# Digital Guangxi Geospatial Infrastructure

A Feasibility Study of Guangxi Surveying, Mapping and  
Geoinformation Development Strategies towards ASEAN Countries

**Ms. Yuqing He**

Tel.: +86(0771)5644450

Email: [hyq\\_grace@163.com](mailto:hyq_grace@163.com)

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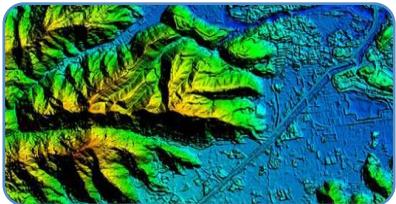
Rizqun International Hotel, Gadong, Negara Brunei Darussalam

**Geomatic Center of Guangxi, China**





# Geomatics Center of Guangxi



## 1-Guangxi Geographic Data Management

- DOM/DEM/DRG/DLG



## 2-Guangxi CORS Operation and maintenance



## 3-Digital Guangxi Geo-spatial Infrastructure

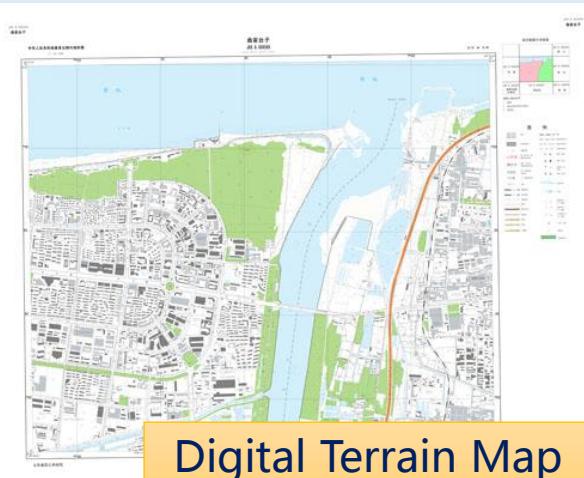
- MapWord·Guangxi



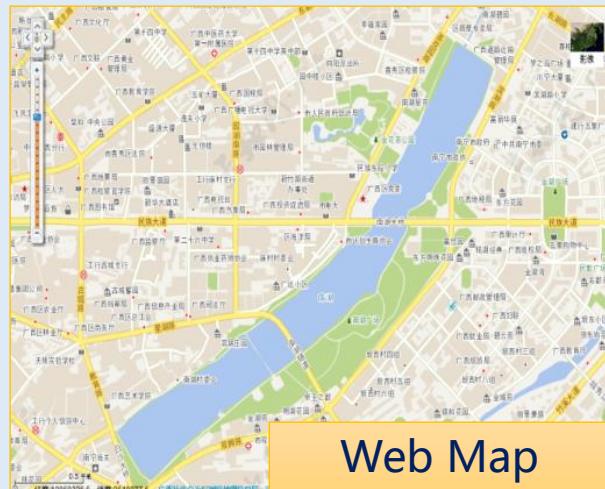
## 4-High-resolution Earth Observation System

- GF-01, GF-02, ZY-3, TH Satellite Remote Sensing Data

# Geospatial Data



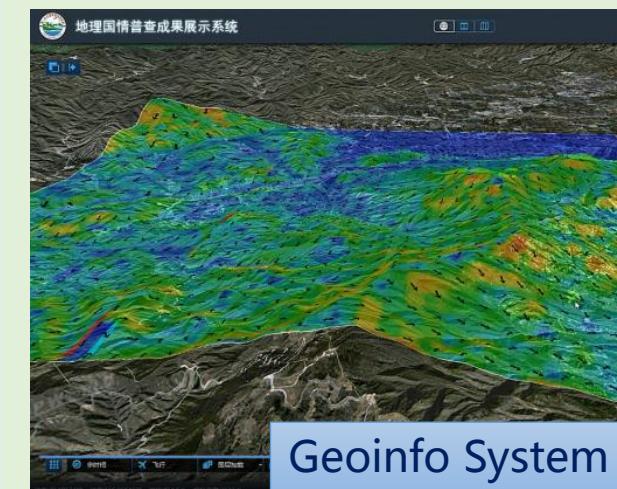
Digital Terrain Map



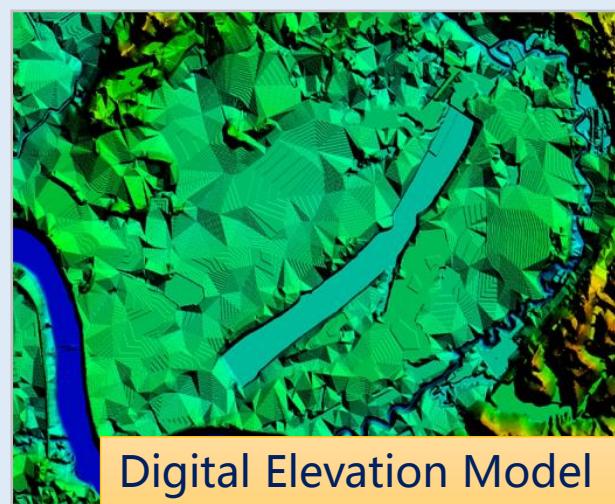
Web Map



DOM



Geinfo System



Digital Elevation Model



3D Model

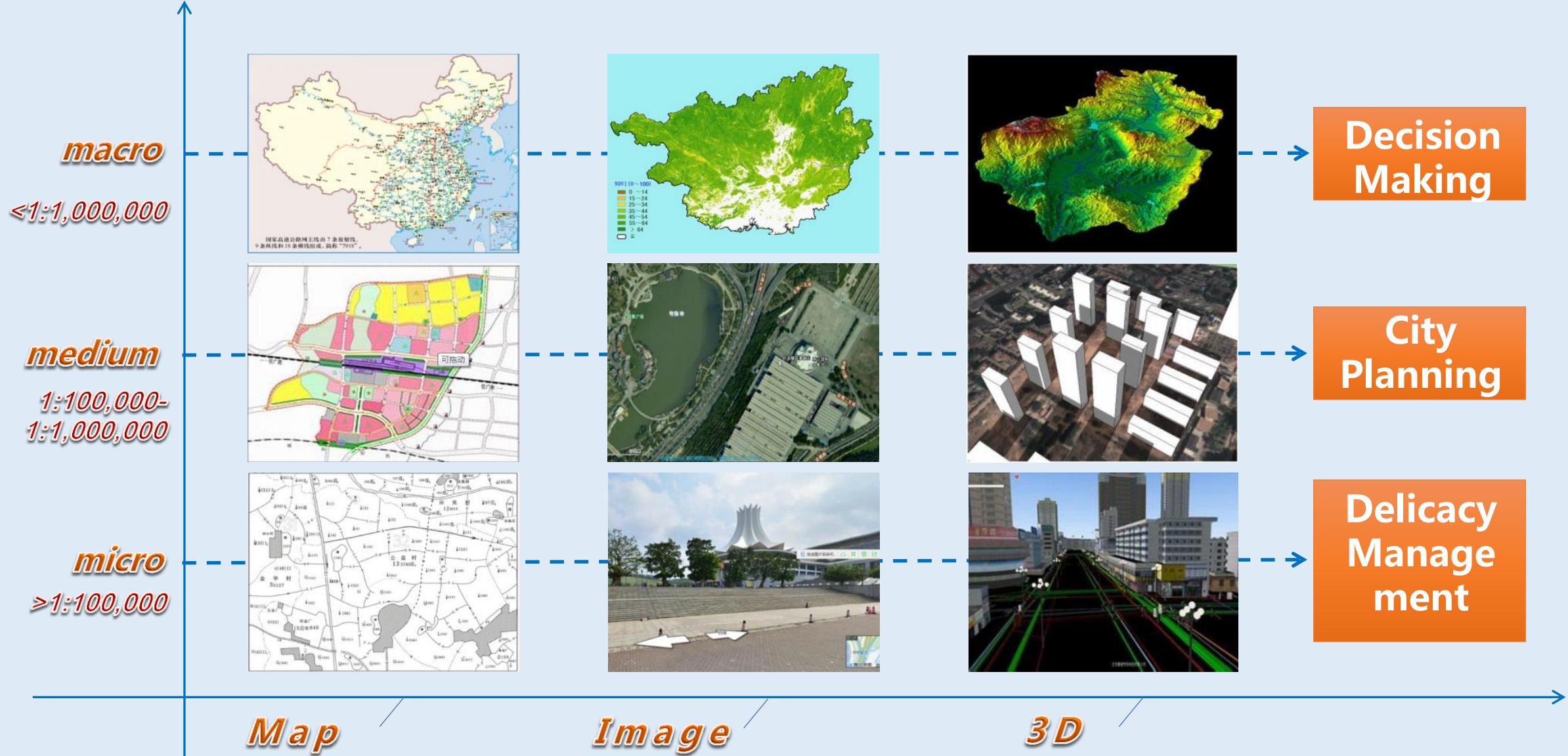


Street View data

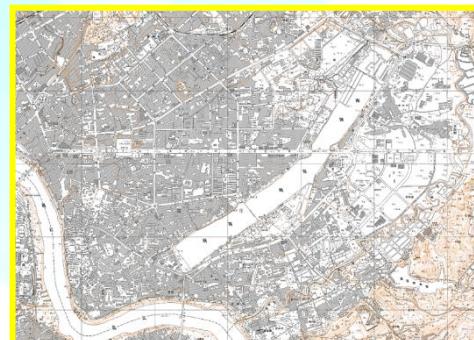
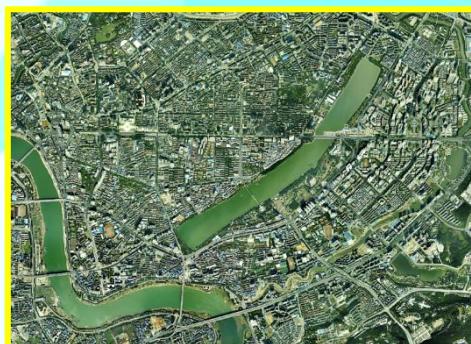


Positioning Service System

# Scales



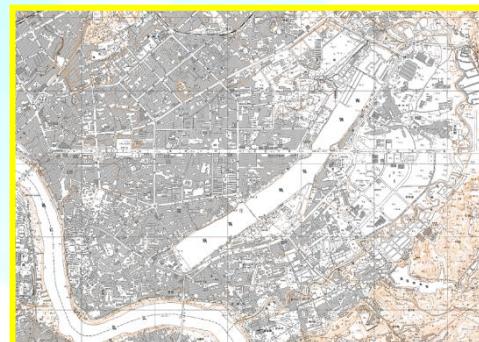
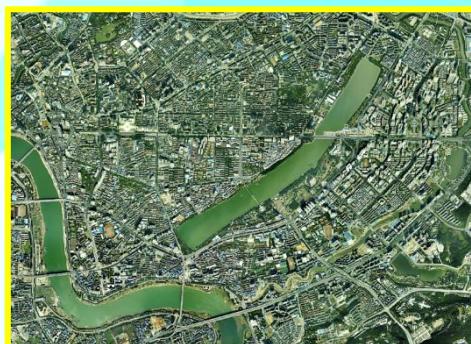
# Data Volume



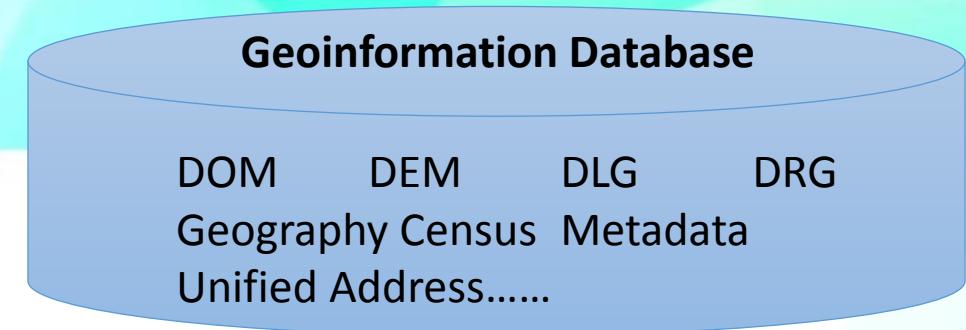
In 2016, our center received data from **25** projects with the total data volume of more than **10,000 GB**. Also, we distributed data to **21** major projects with **740,000** frames of geo products, the data volume reached **507 TB**.  
*100 million yuan= 20.4 million ringgit*



# Data Volume



How do we store them?



**One Database**

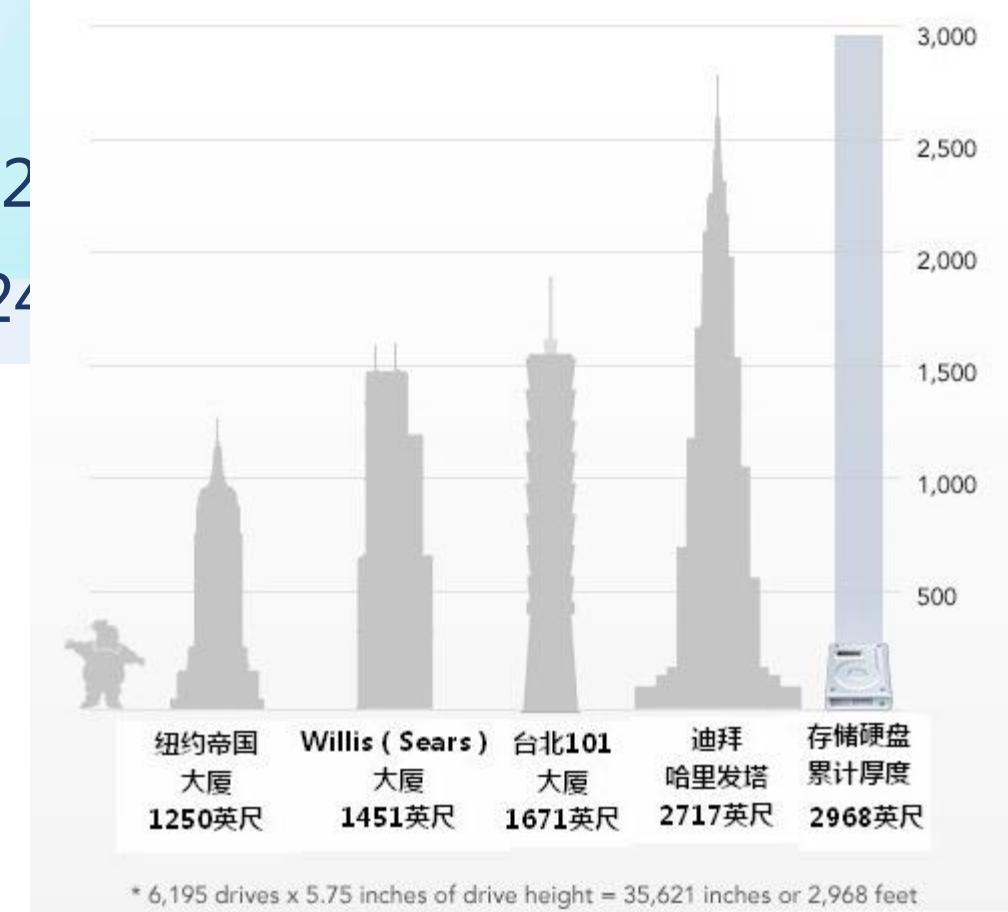
# Data Volume

How much storage space do we need?

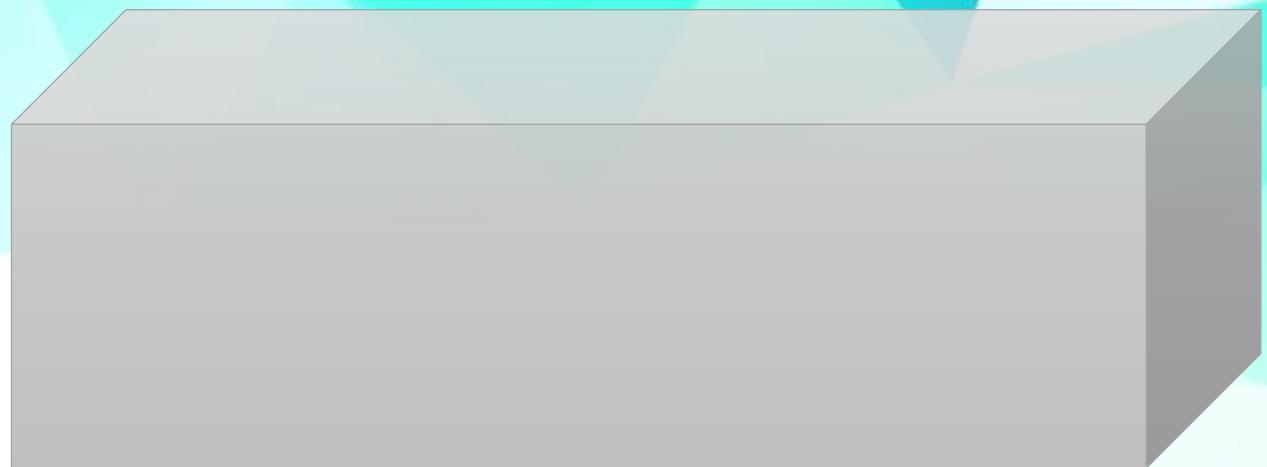
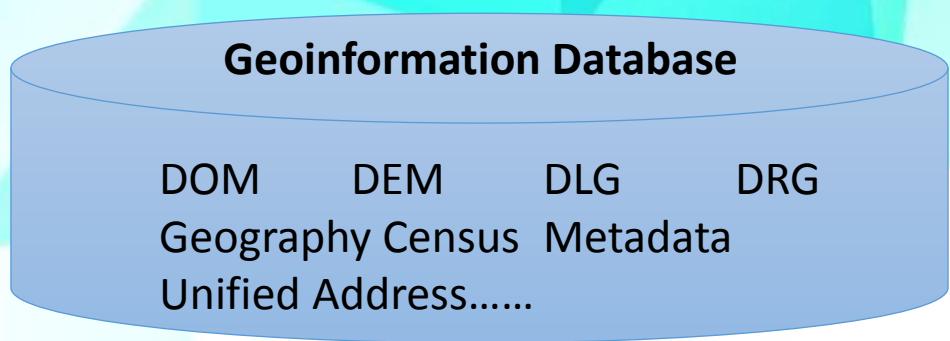
1 GB = 1024 MB = 1048576 KB

1 TB = 1024 GB = 1048576 MB = 1073741824 KB

1 PB = 1024 TB = 1048576 GB = 1073741824 TB



# How do we store them?



**Big Data Center**

# Unified Coordinate System

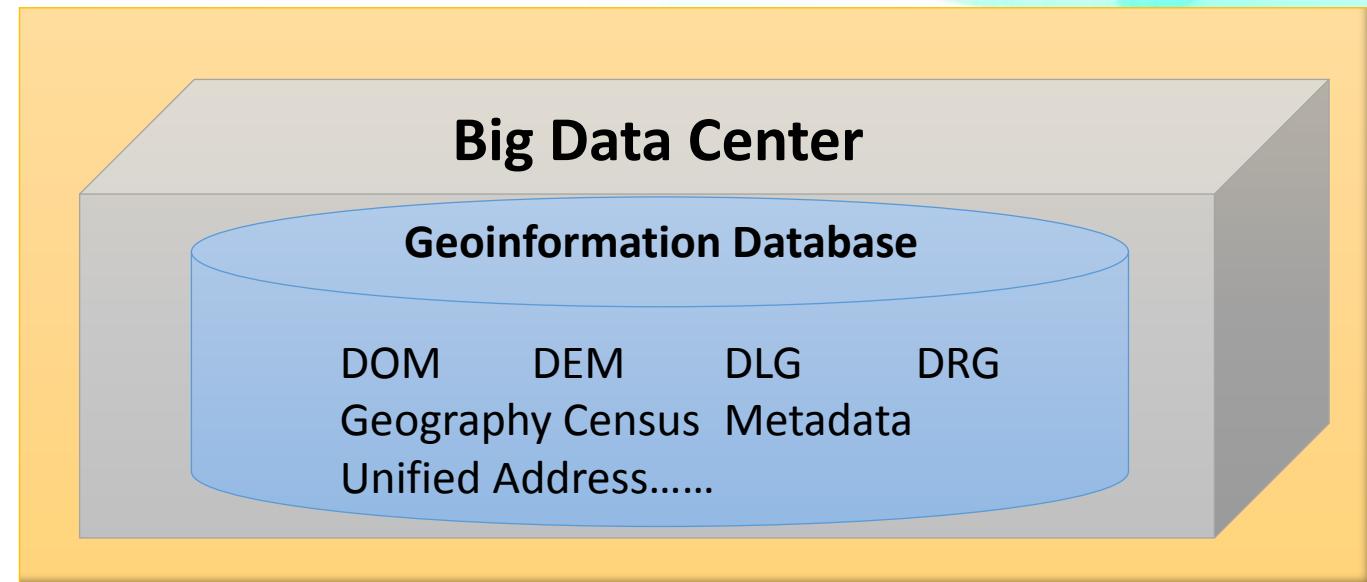
BJZ54 – Beijing 54

Xi' an80

WGS84--World Geodetic System 84

CGCS2000--China Geodetic Coordinate System 2000

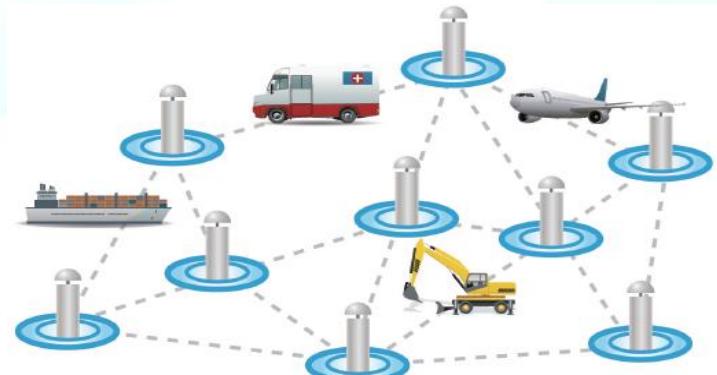
## Guangxi Fiducial System for Modern Surveying



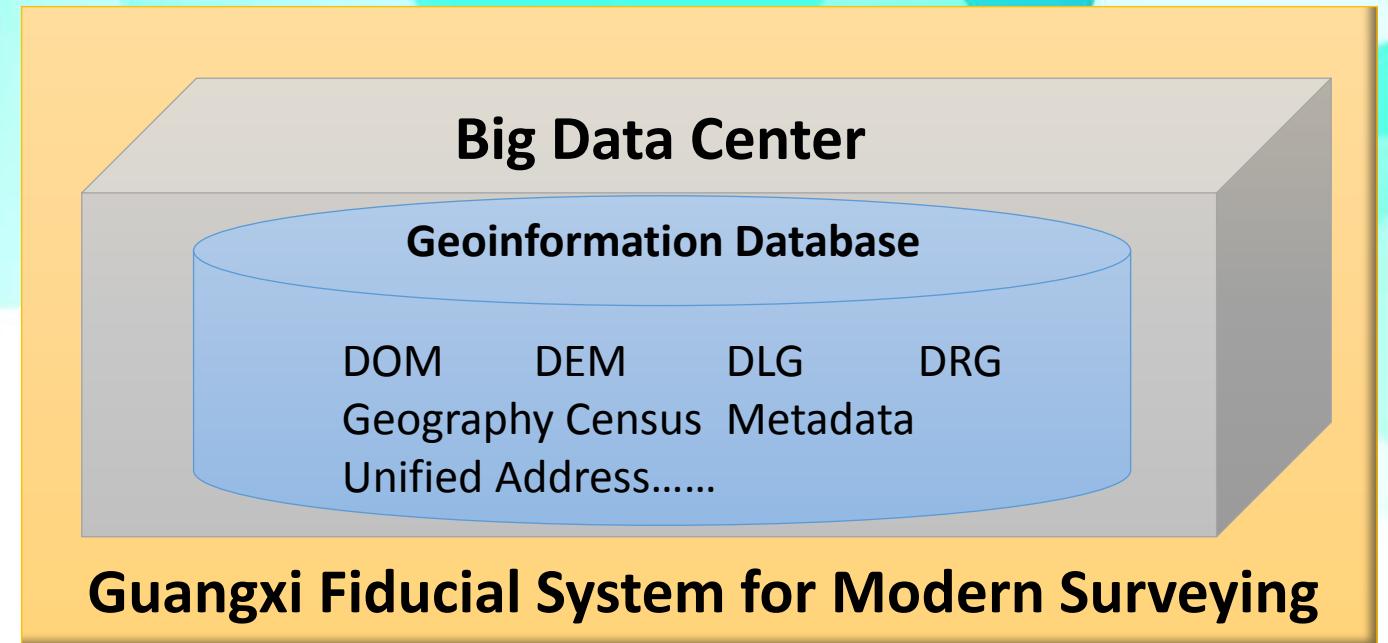
# Guangxi Fiducial System for Modern Surveying



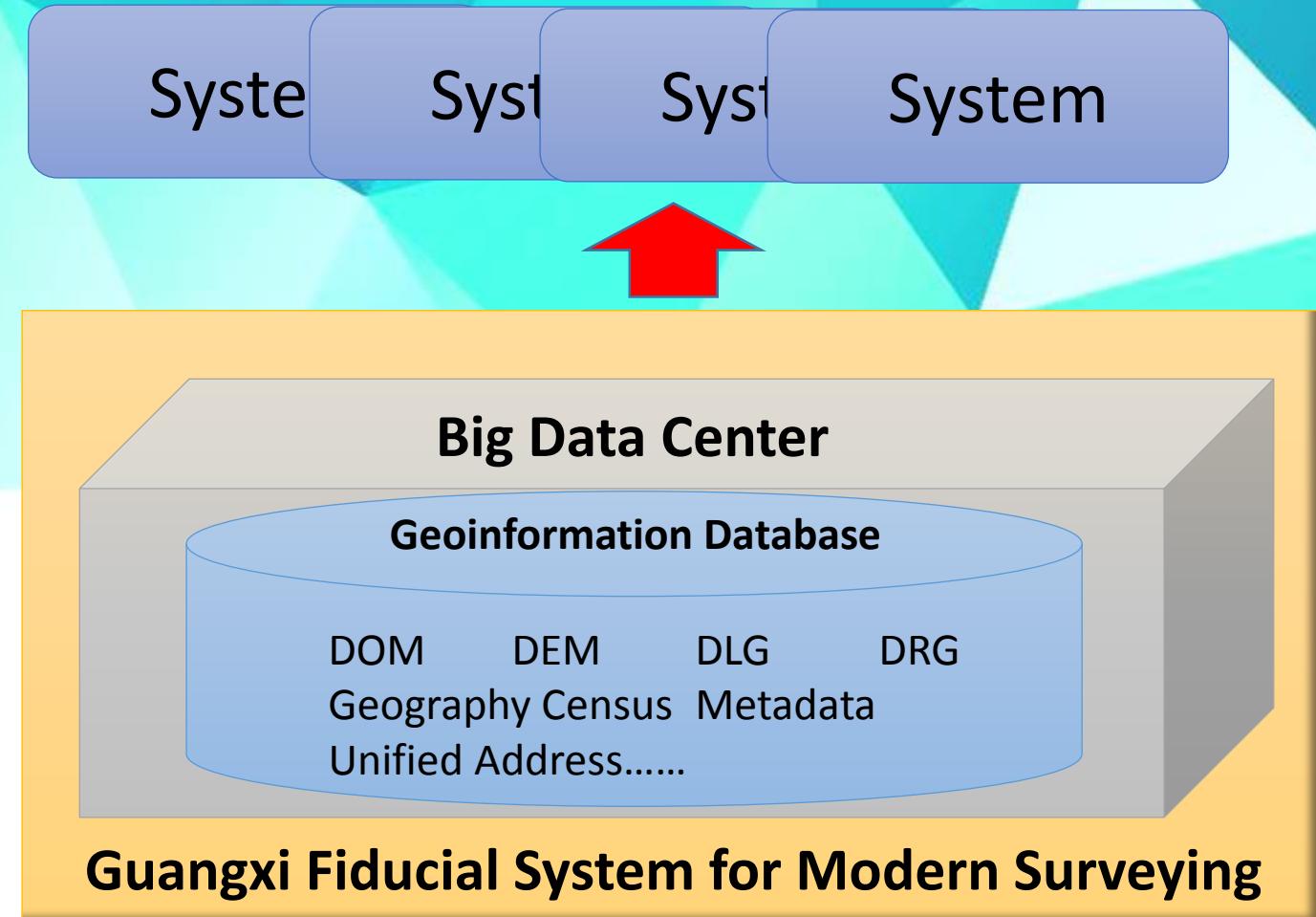
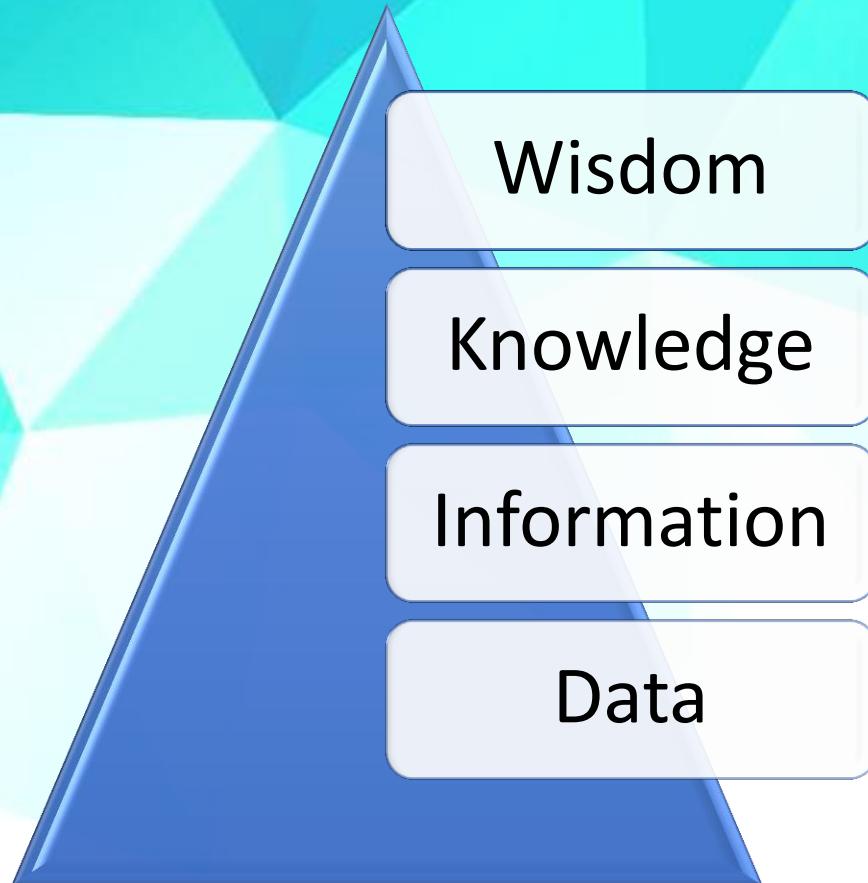
GPS Network  
Leveling Network  
Quasi-geoid  
CORS Network

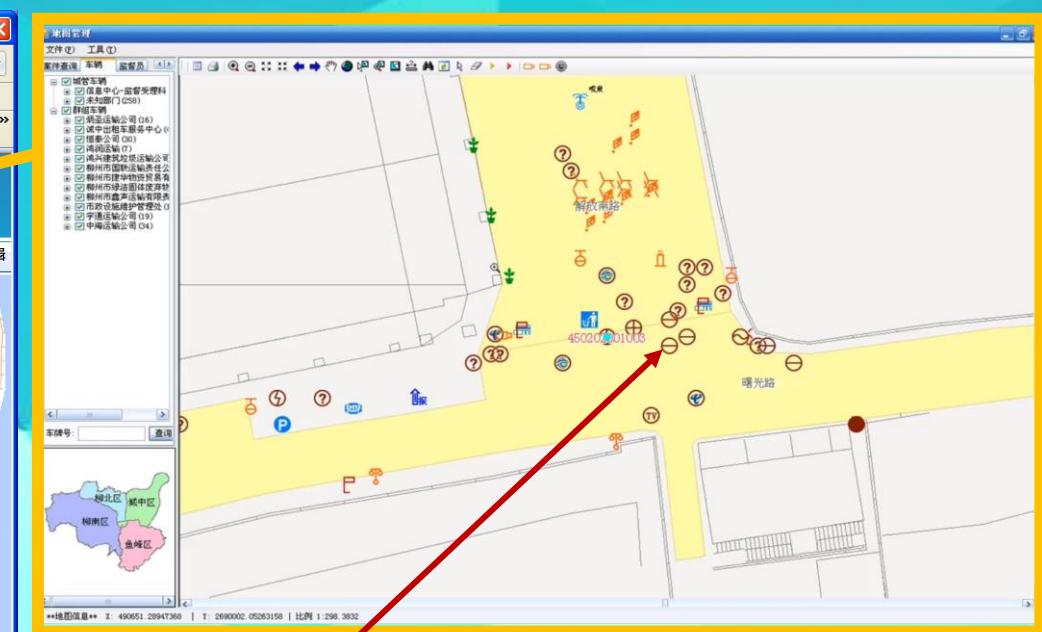


# Guangxi Fiducial System for Modern Surveying



# How to use geo-data?





部件编号	450202105004495	
部件分类	井盖	
部件子类	电力井盖	
X/Y坐标	490664	2689994
型号	KTL-4800	
单元网格	4502020010017	
所属城区	城中区	
所属街道	城中街道办事处	
所属社区	龙城社区居委会	
责任部门	柳州供电局城中分局	

# System Instance: Digital Urban Management

SHUZILIUZHOU SHUZICHENGGUAN

# System Instance: Digital Urban Management



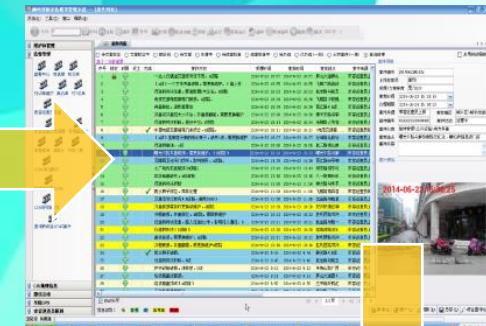
Citizen report  
well lid destroyed



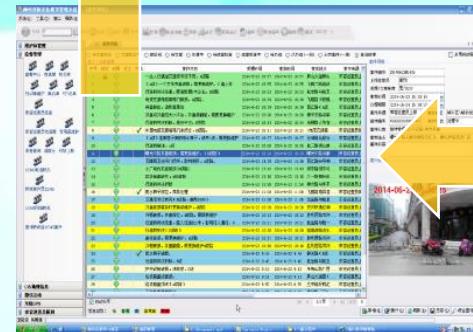
Control Center  
deploy inspector



Inspector take  
photo and  
confirm



Field info sent  
back to system



Case close and text  
the reporter



Take photo and  
upload it to  
system when  
finish



Responsible  
dept. send staff  
to repair



Control center  
notify relevant  
department

# System Instance: MapWorld Guangxi

The screenshot displays the MapWorld Guangxi system interface, featuring a map of the Nanning area in China. The map includes satellite imagery, roads, and various geographical features. Key locations labeled include the Nanning International Convention and Exhibition Center, the South Lake, and several major roads like the National Highway 324 (G324) and the Ethnicity Avenue (民族大道). The interface has a top navigation bar with links for today's date (2017-08-14), search, driving, public transport, and other services. On the left, there is a detailed map of the Nanning city center with numerous local government and administrative offices marked. A legend at the top left provides icons for government, traffic, medical facilities, schools, and restaurants. The bottom right corner shows coordinates (108.34, 22.77).

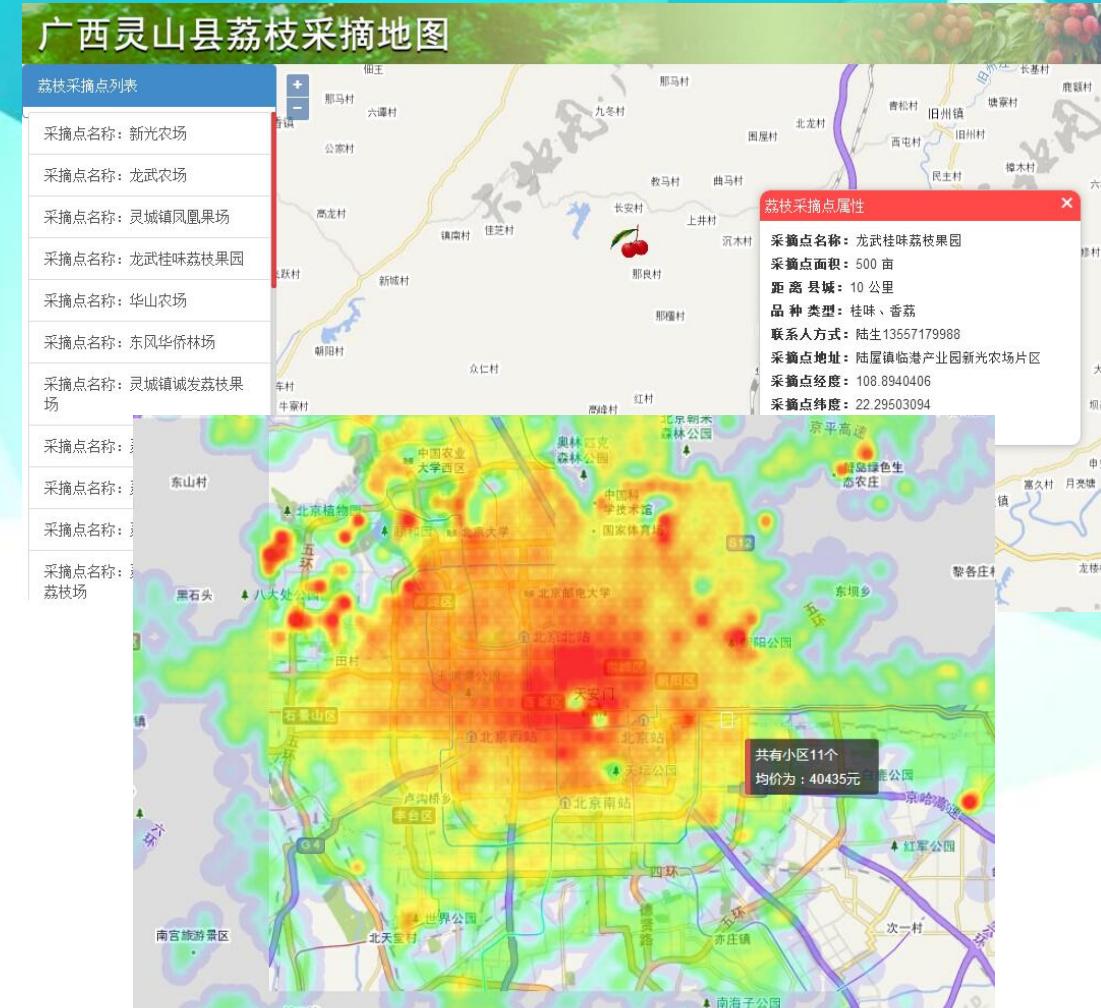
# MapWorld Guangxi: Further Application

The screenshot shows a satellite map of a rural area in Guangxi, China. The map displays various villages, roads, and agricultural fields. A legend on the left indicates different land use types. A red box highlights a specific location in the center of the map.

The screenshot shows a map of Nanning city, the capital of Guangxi. The map includes major roads, landmarks, and residential areas. A legend on the left provides search filters for projects by name, category, administrative division, construction method, completion year, developer unit, and project type. A table below lists various affordable housing projects with their names and addresses.

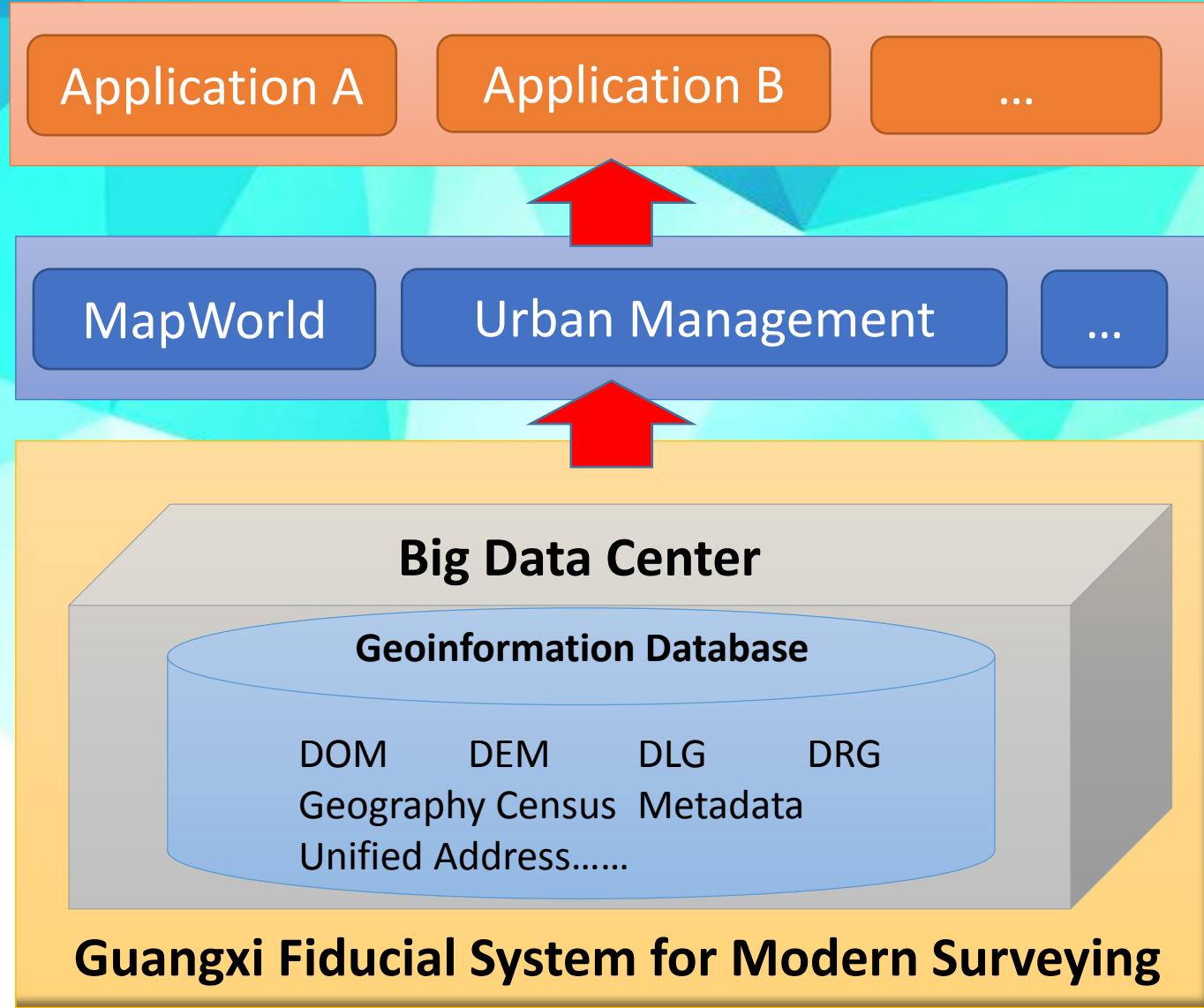
名称	项目类别	编辑	查看进度
南宁华侨投资区兴侨小区	经济适用住房		
南宁市凤岭在水一方	经济适用住房		
南宁市桃花源小区	经济适用住房		
南宁市南宁新兴苑	经济适用住房		
五象大道#地块项目	限价商品住房		
长期景苑	限价商品住房		
香禾农贸公司友爱南路42号小区	限价商品住房		

Affordable Housing Information System



Emergency Management Image Access System

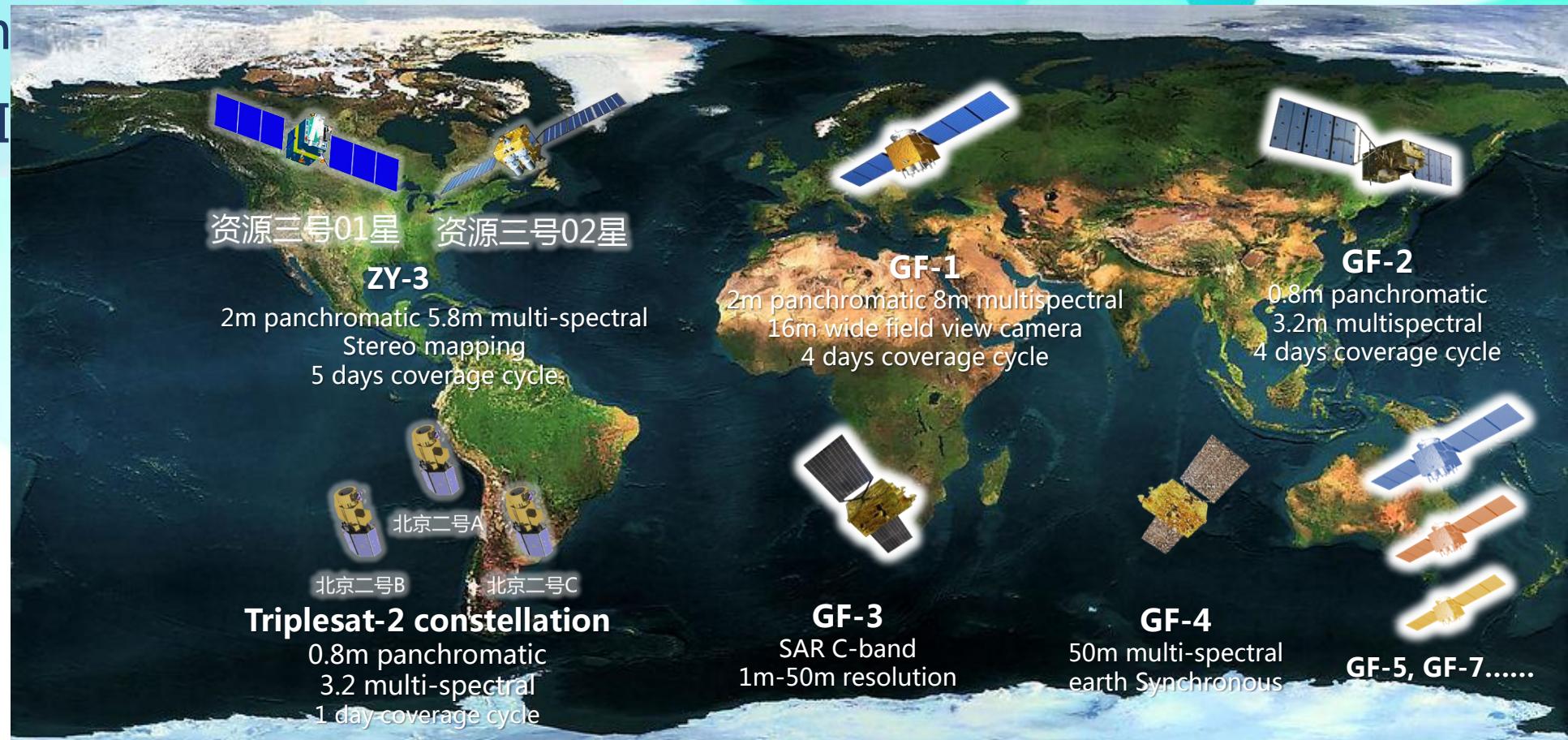
How to  
update?

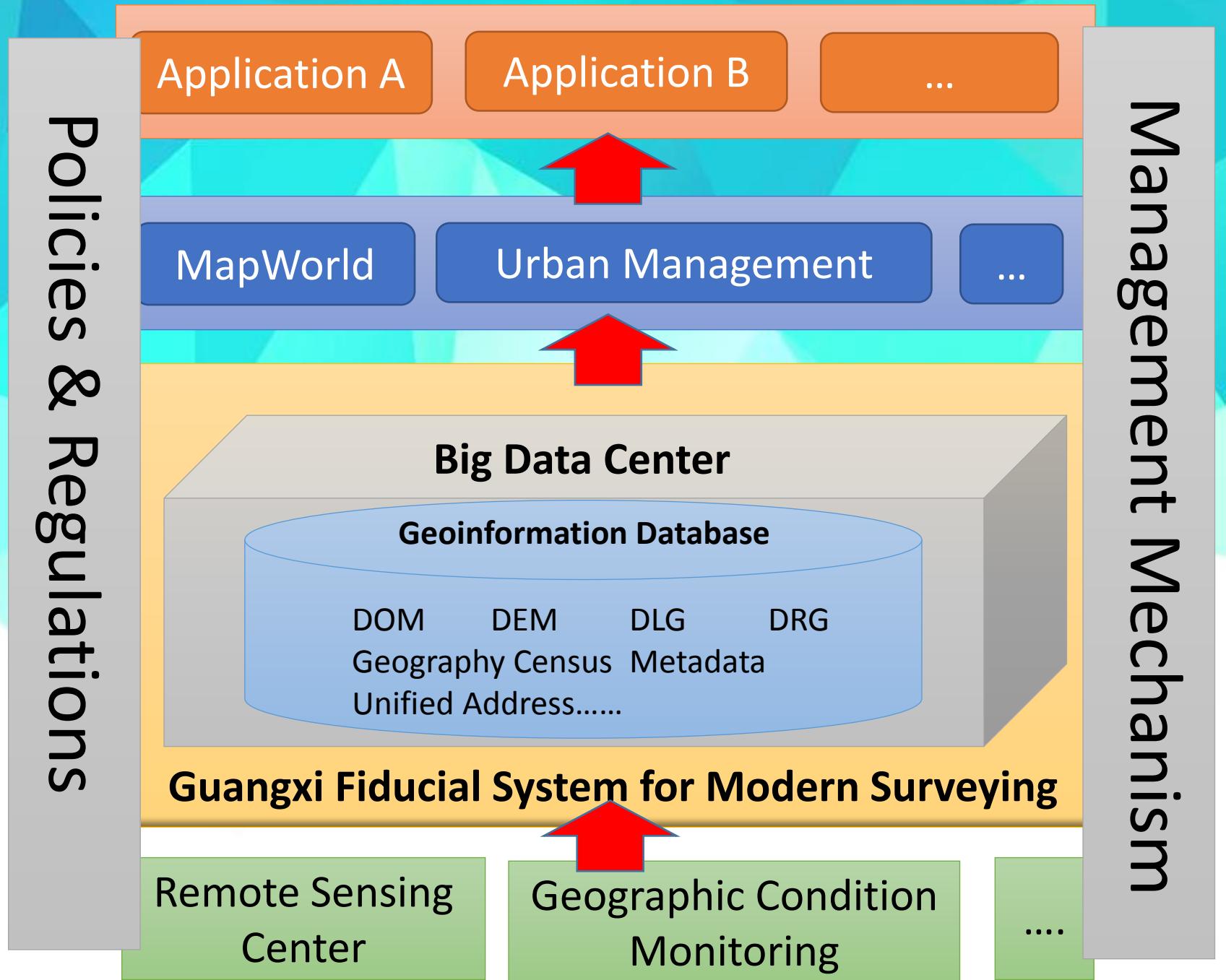


# Updating Mechanism

Type of geo-data that needs update:

- Remote sensing image
- Digital map
- Point of Interest



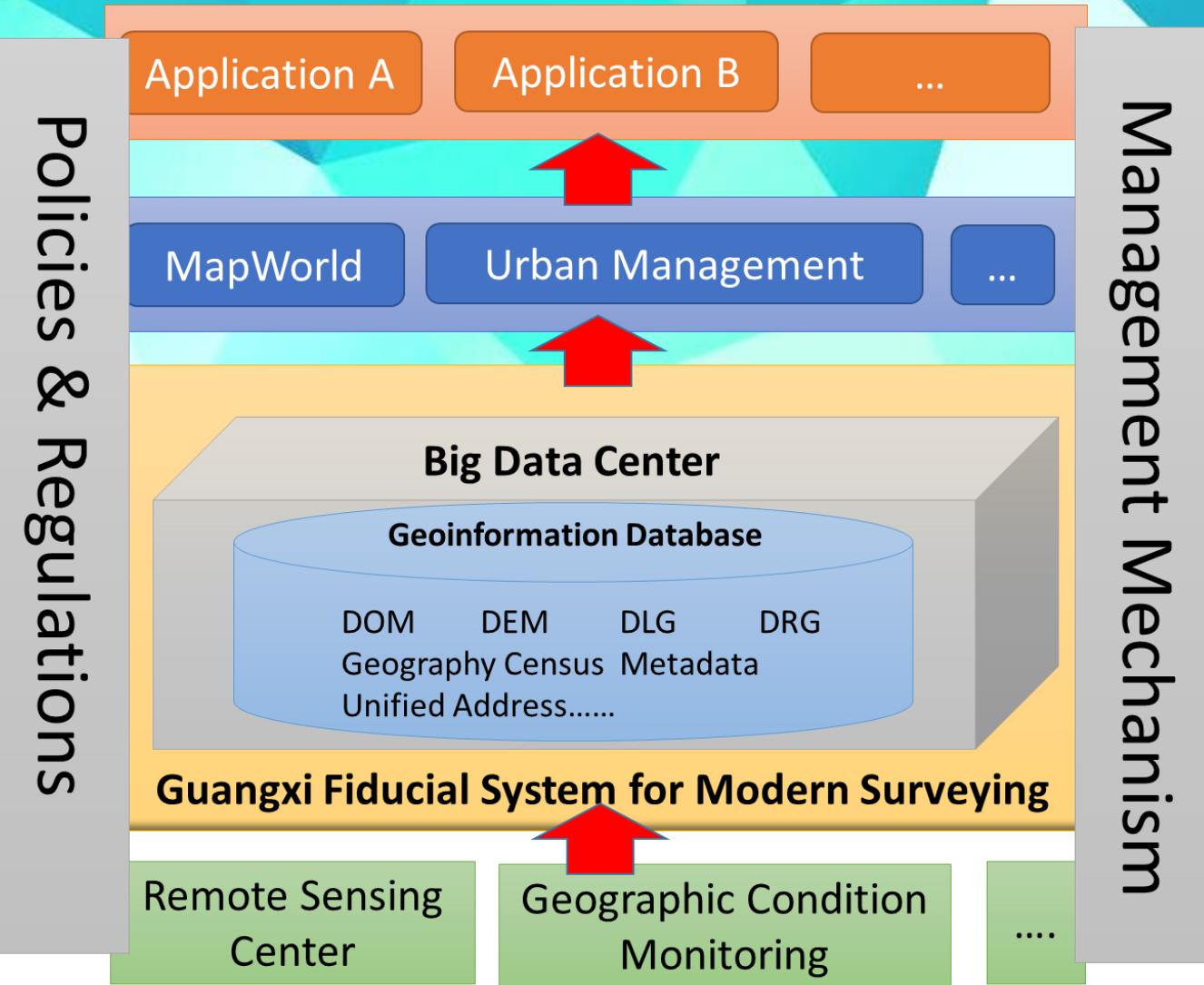


# Digital Guangxi Geospatial Infrastructure

Goal:  
Authoritative  
Exclusive  
Unitive platform



## Policies & Regulations



## Management Mechanism

# Digital Liuzhou Geospatial Infrastructure

- Share resources
- Reduce repeated investments



- Uniformly collect, process, maintain and publish open data
- Avoid repeated production of basic data, lower database creation cost

- No need to purchase hardware and GIS software
- Save funding

Shrink to 1/3 timespan comparing to original developing circle

# Thank you!

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