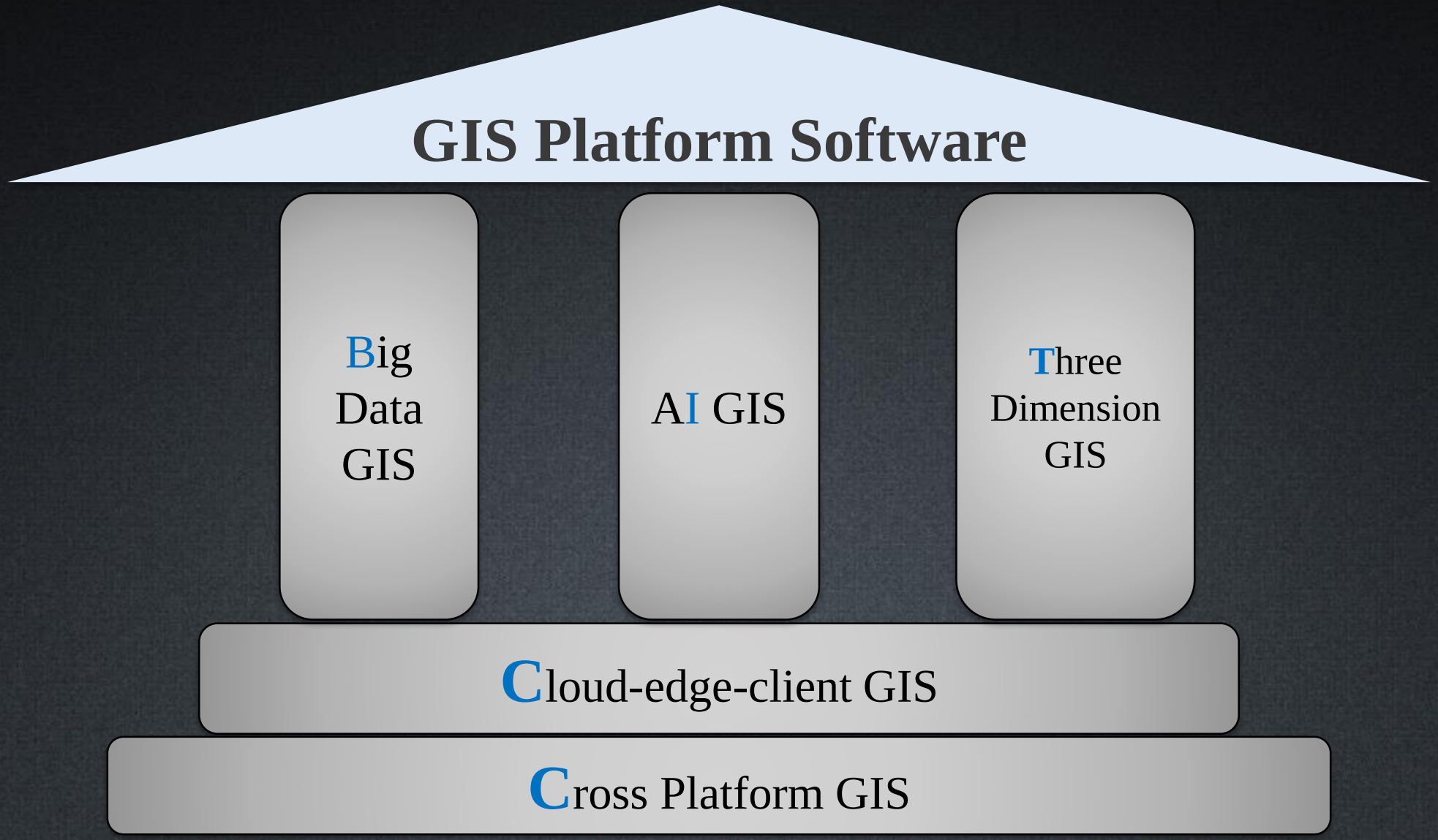
SuperMap GIS 10i(2022) 3D Technology

V10.1.0

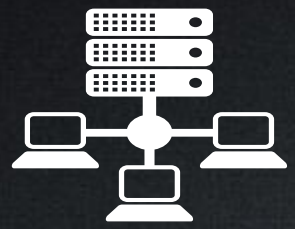
Mohsen Hosseinpour : Supermap Comapany Agent in Iran

به نام خدا

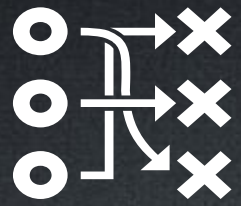
5 Technologies of GIS Platform Software(BitCC)



Big Data GIS

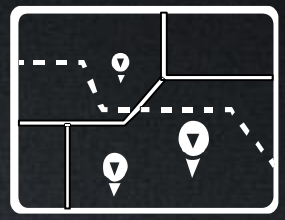


Big Data Storage Management



Big Data Analysis

Streaming Data Processing

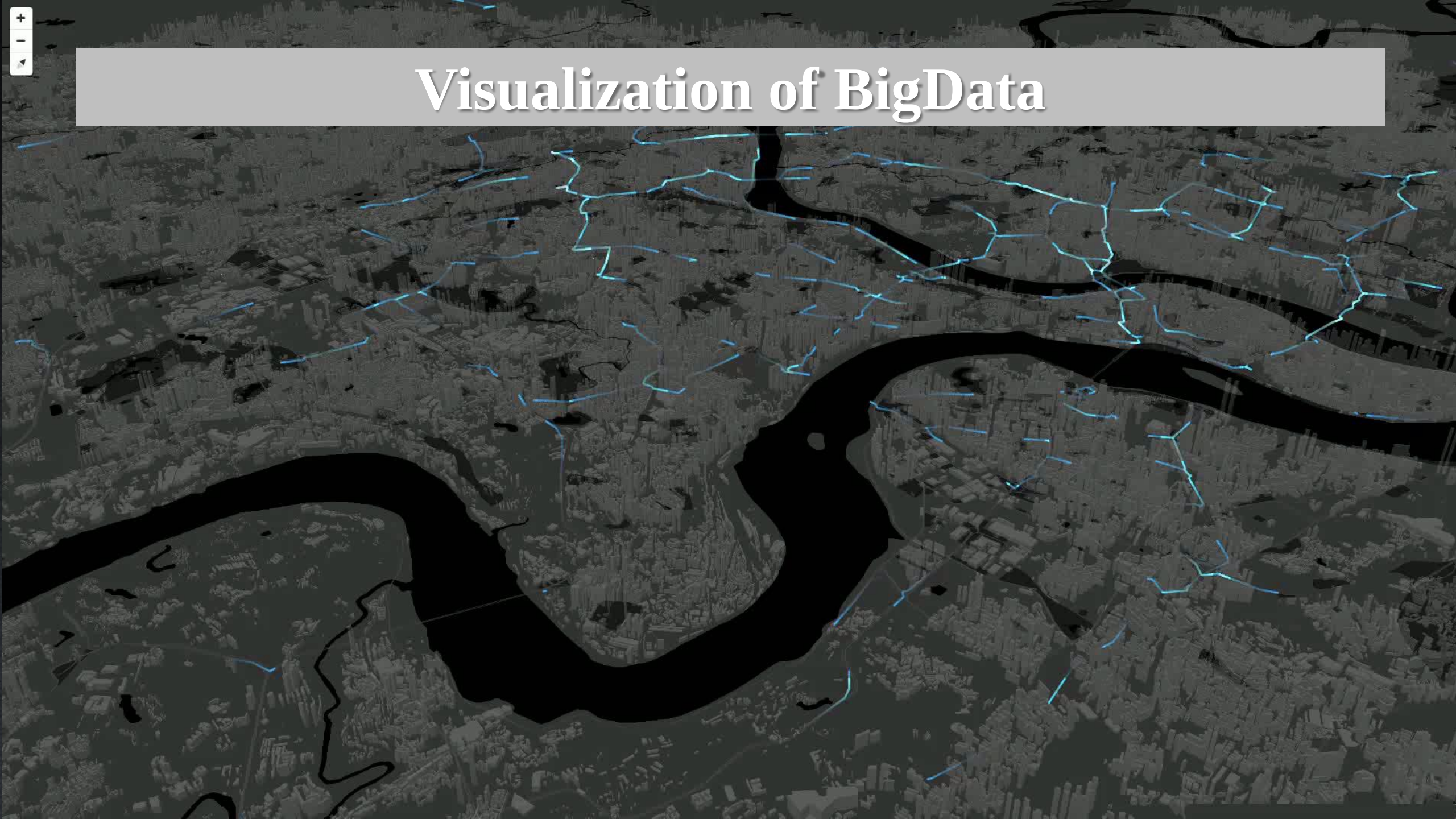


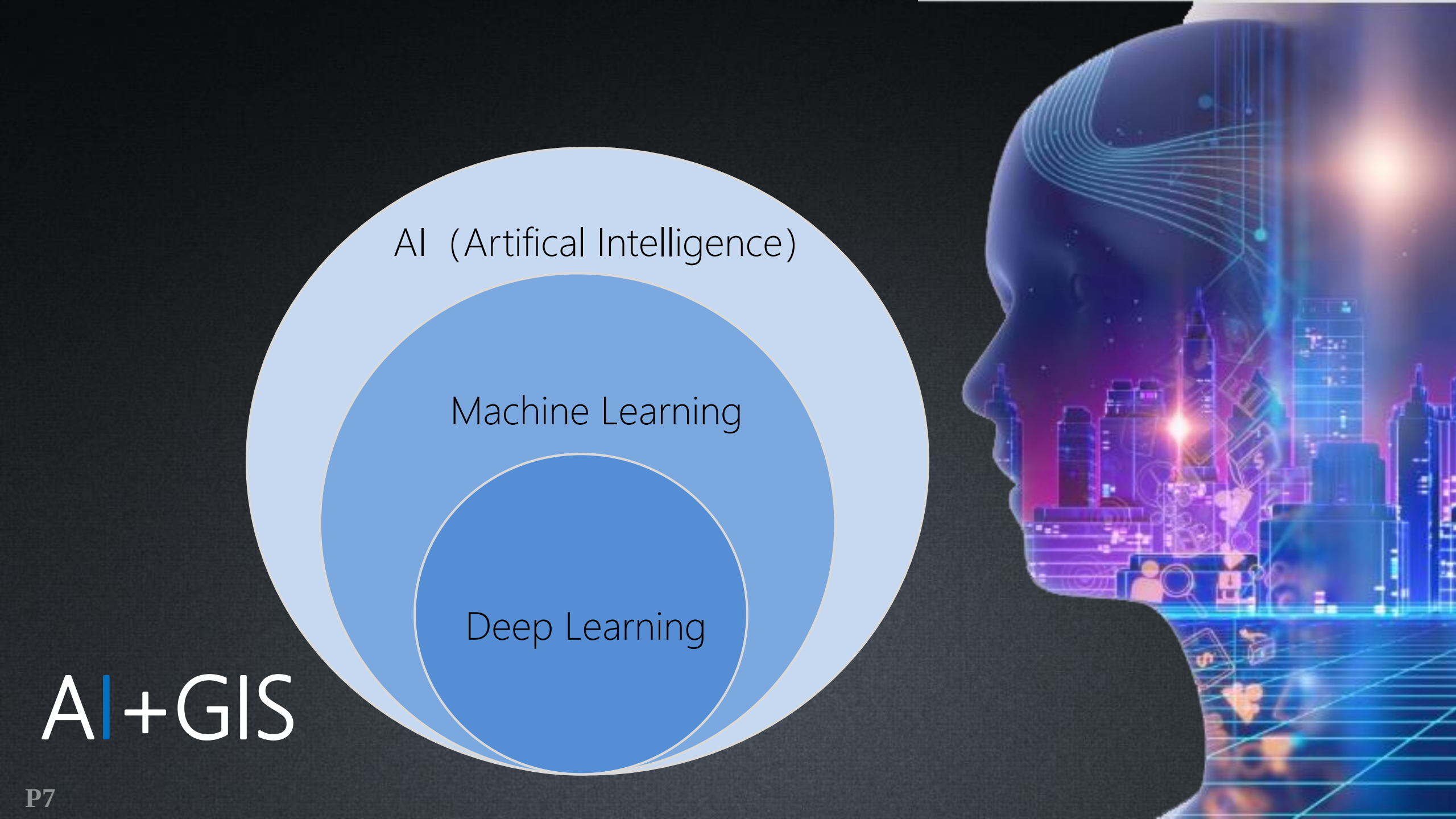
Big Data Visualization

Cloud GIS

Big Data GIS Support Technology

Cross-platform GIS

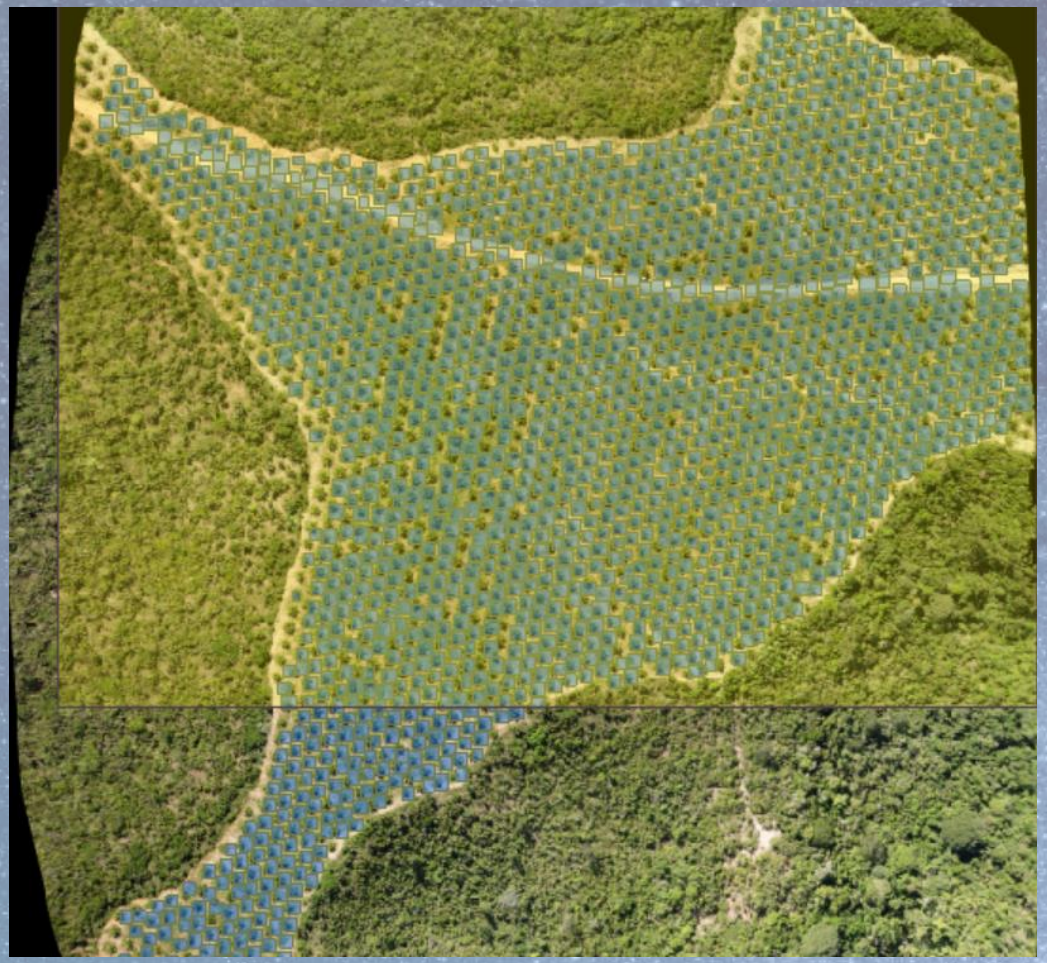

Visualization of BigData


AI（Artifical Intelligence）
Machine Learning
Deep Learning

AI+GIS

Deep-Learning Based Oblique Photography Building Extraction

The detect result of palm trees



New Generation of Three Dimensional GIS

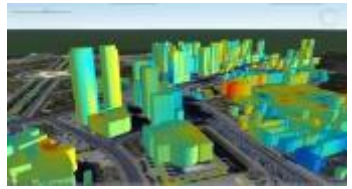
New Generation of 3D GIS Application

WebGL | VR | 3D Printing

Oblique Photogrammetry

BIM/CIM

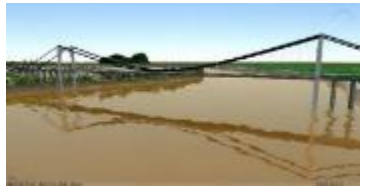
Point Cloud



3D Field

3D Terrain

Manual Modeling



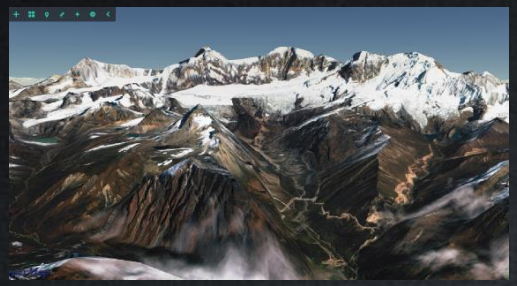
Symbolic 3D Scene

Underground Pipeline

2D & 3D Integration Technology

data model | scene construction | spatial analysis | software form

Multi-Source Data Supported

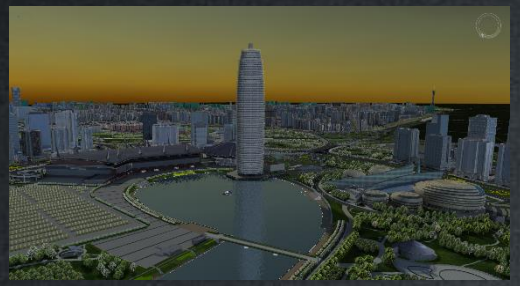


3D Terrain

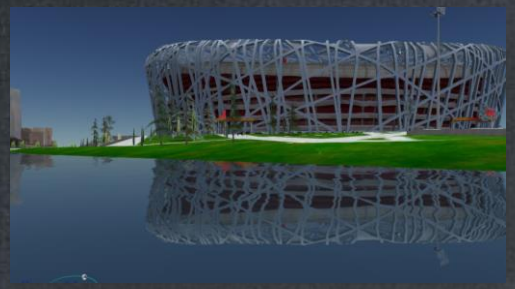
Oblique Photogrammetry

BIM

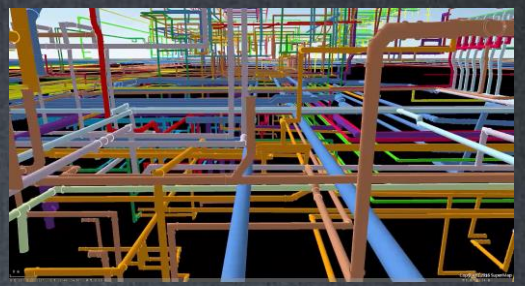
Point Cloud



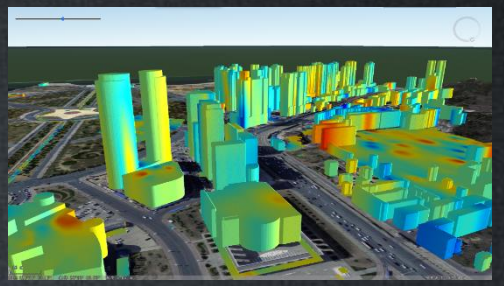
Artificial Model



Water Surface

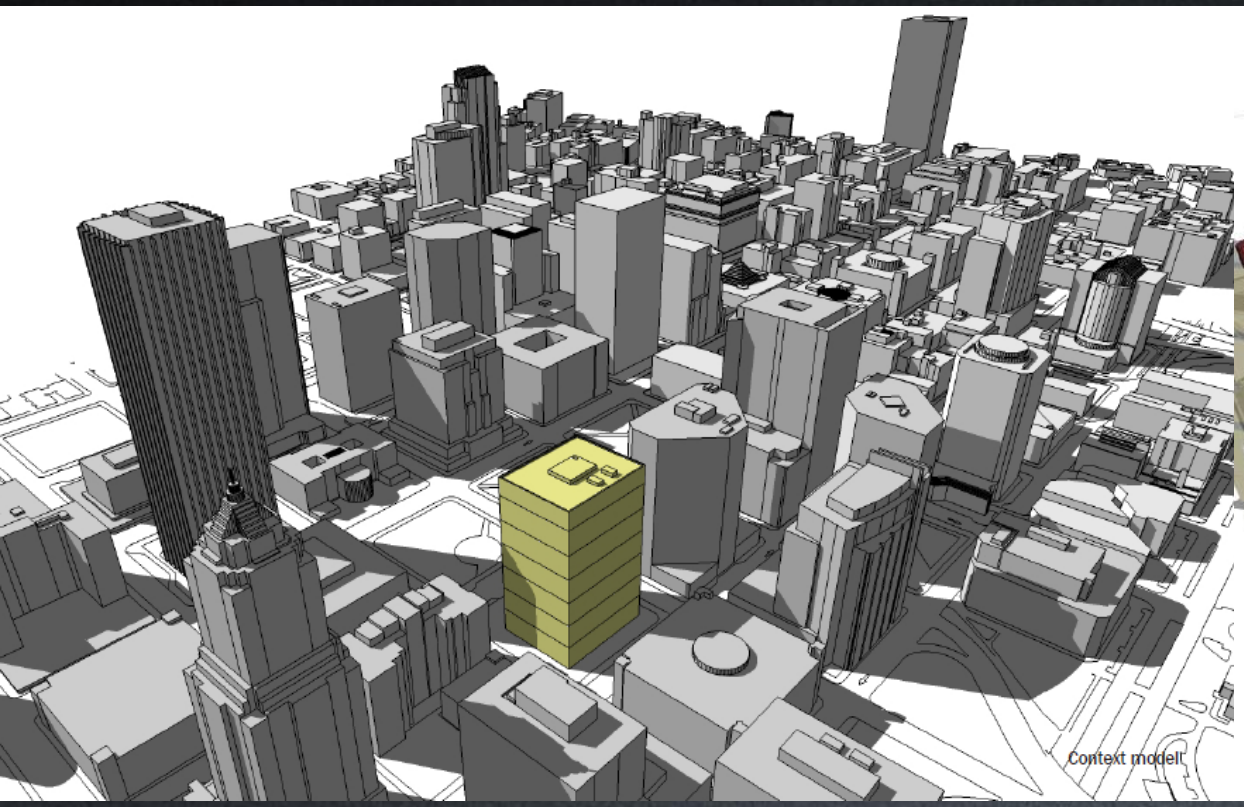


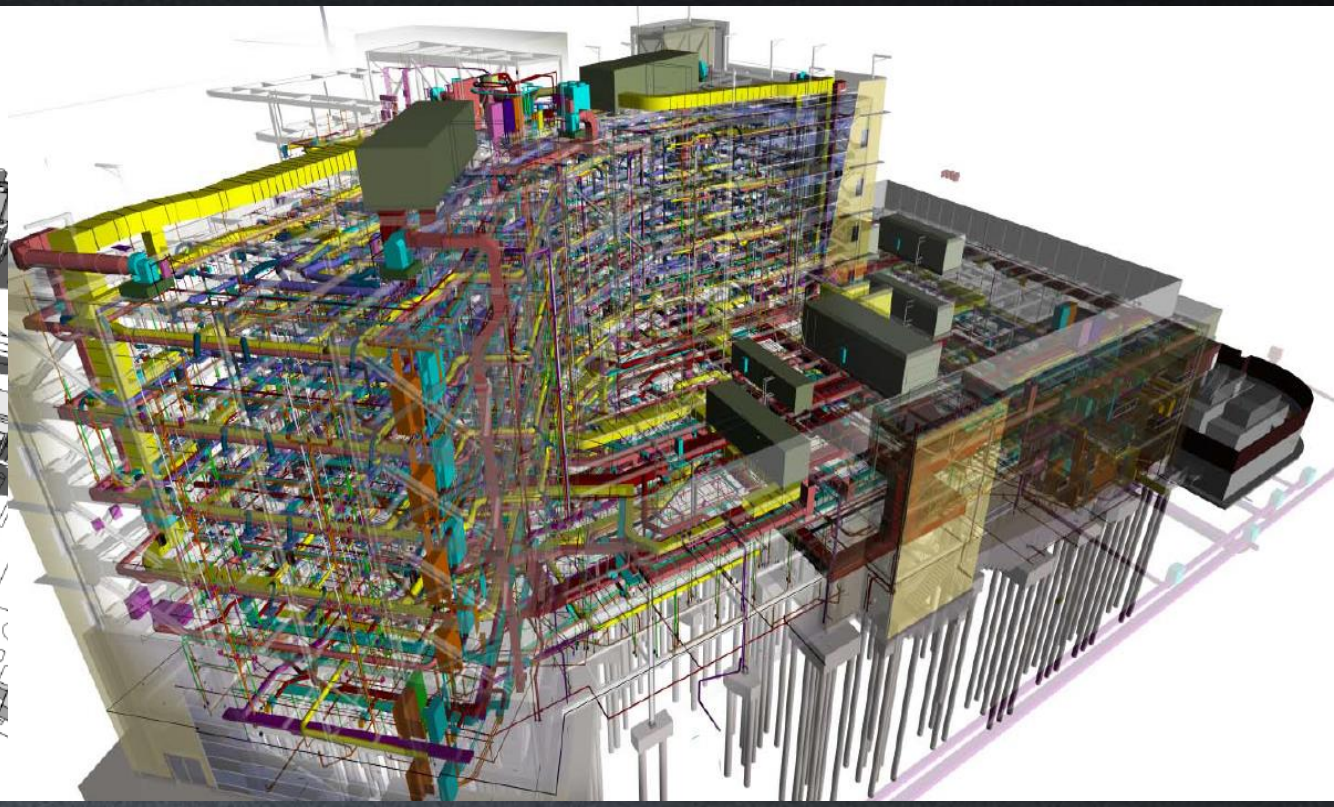
Underground Pipeline



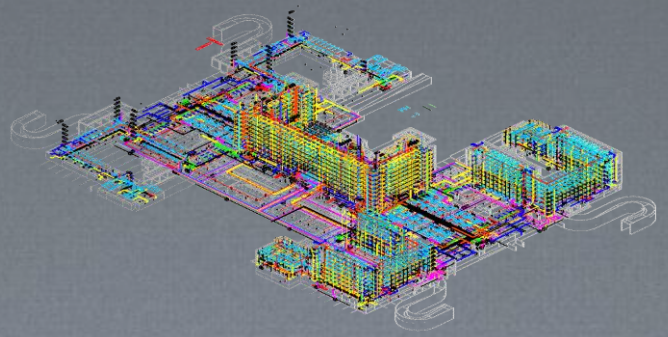
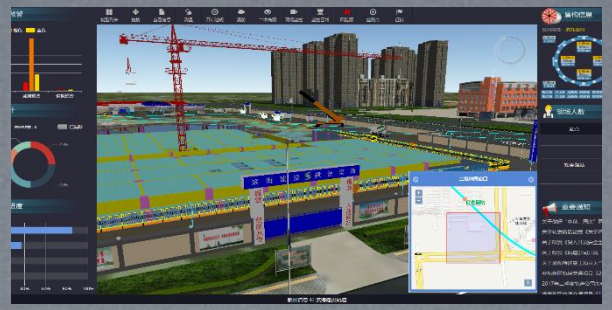
3D Field

BIM

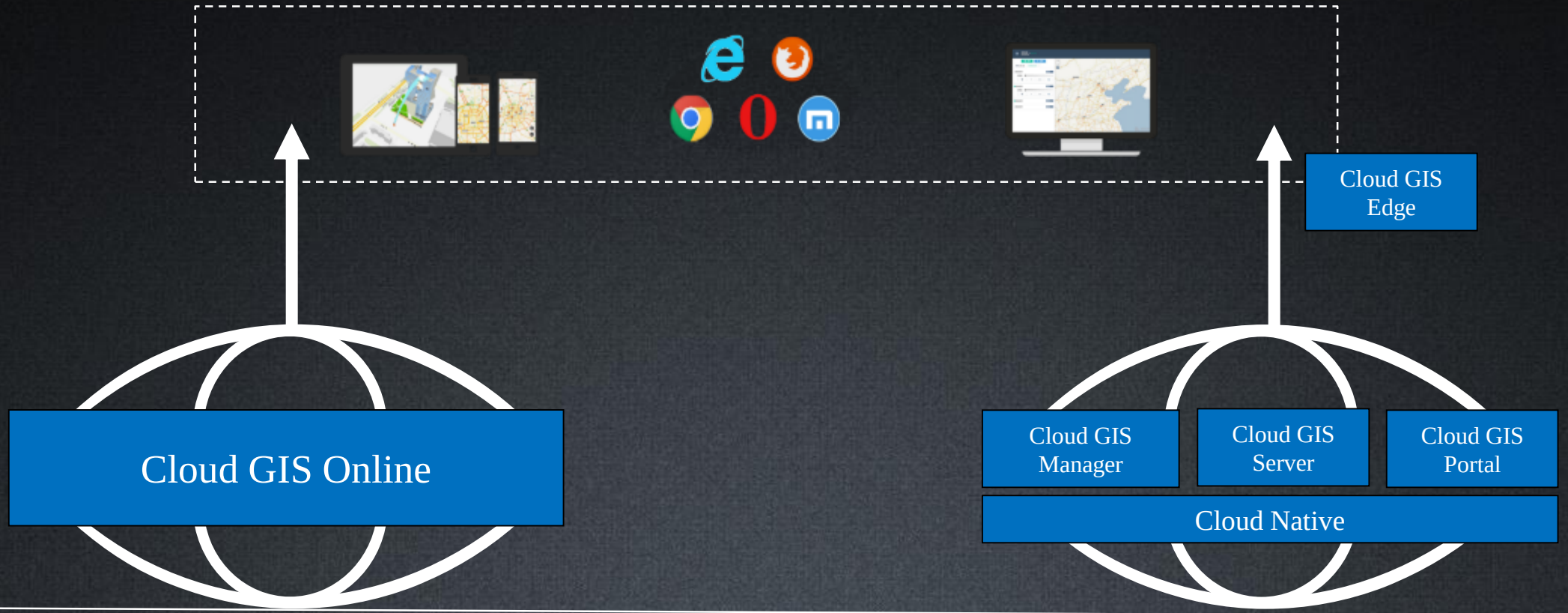




BIM + GIS = Full Life Cycle

	Design	Build	Operation
BIM			?
BIM+GIS	 Urban Design Planning Approval	 Construction Supervision	 Maintenance & Operation

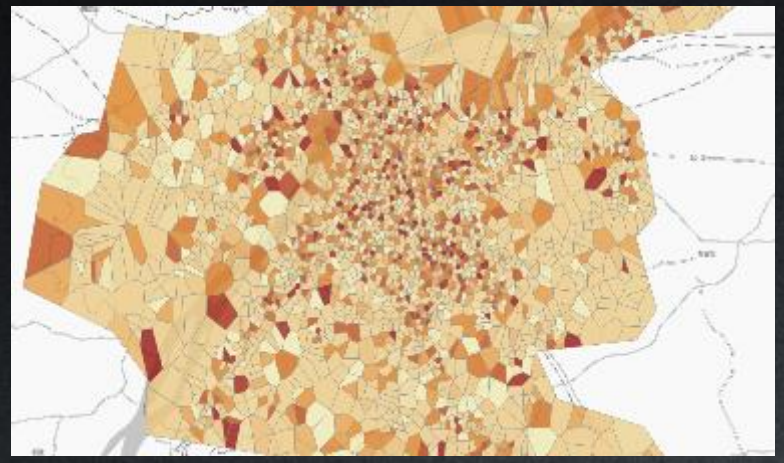
Cloud & Terminal Integration GIS

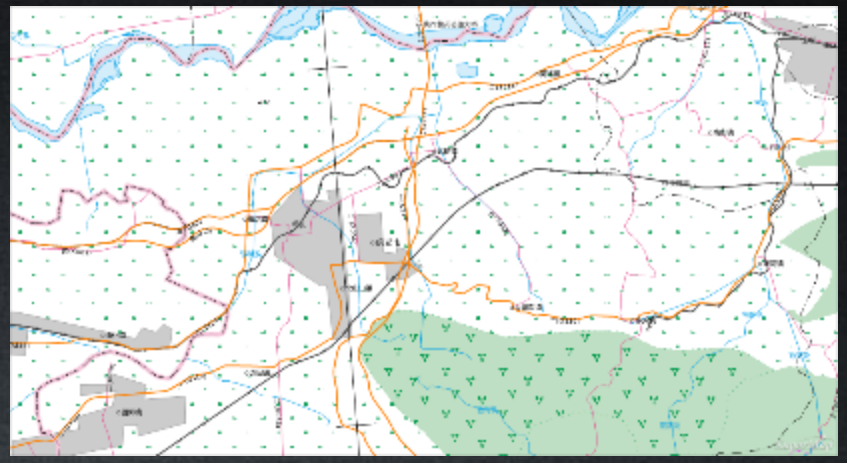


阿里云 aliyun.com openstack. vmware vSphere docker kubernetes FusionSphere Enabled HUAWEI

Public Cloud	Mixed Cloud	Private Cloud

Cross-platform GIS





SuperMap GIS

suse

AIX

x86

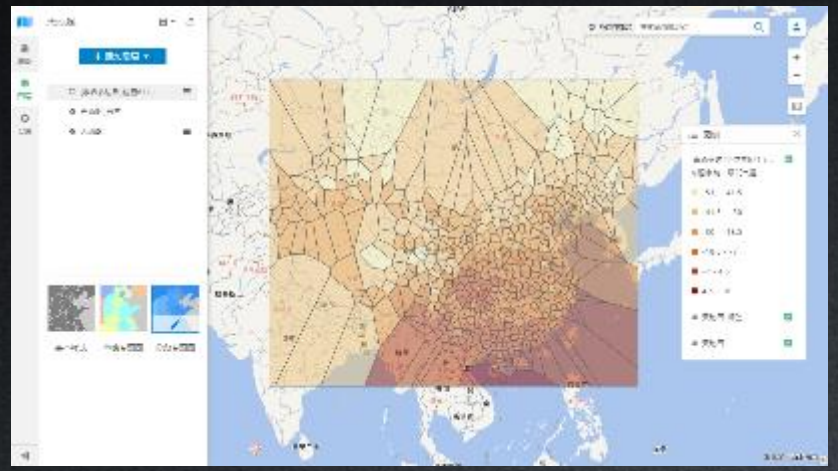
Power

ARM

MIPS

Alpha

Build your Application Center



Online Mapping

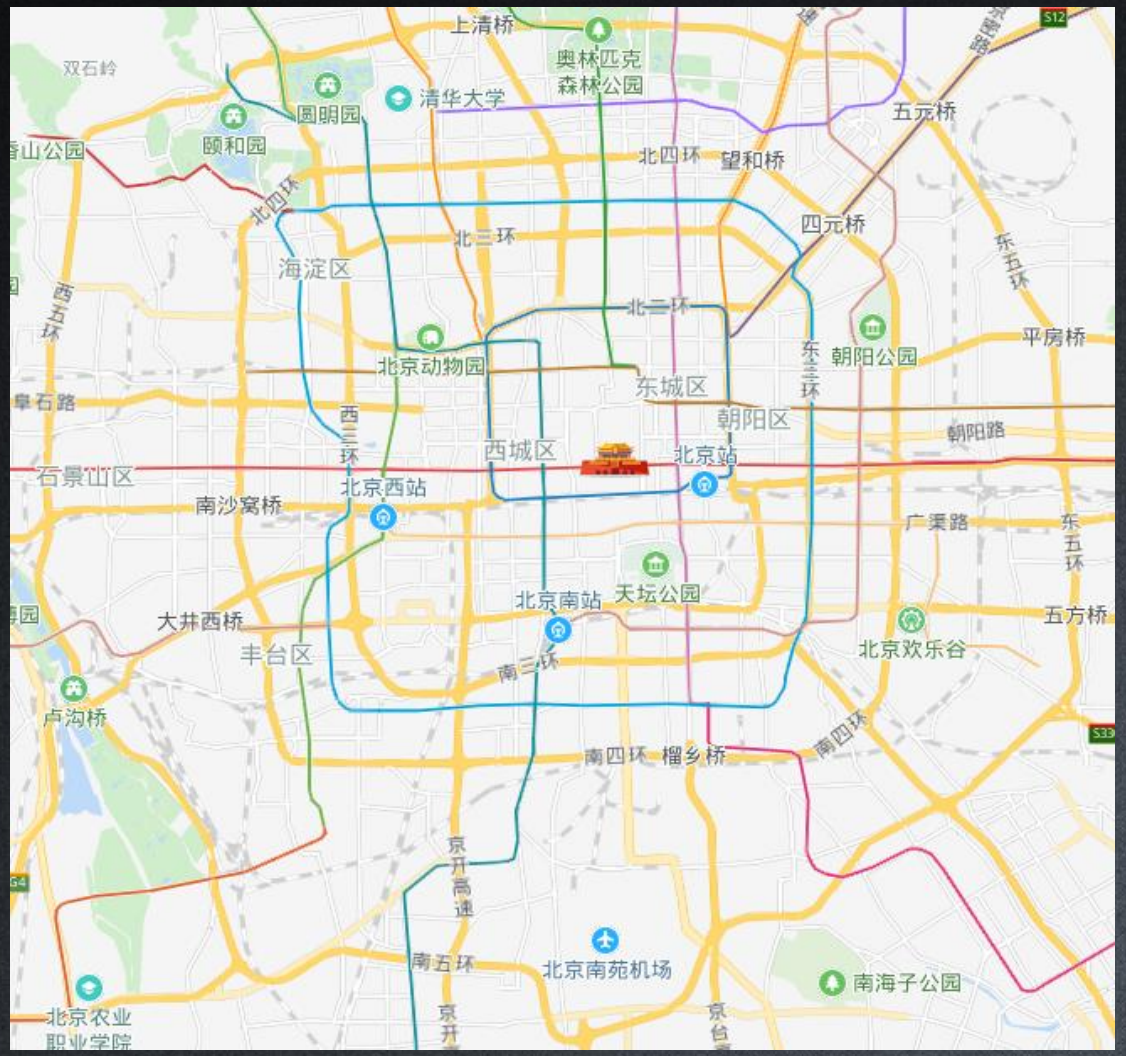
Application Customize

Data Insight

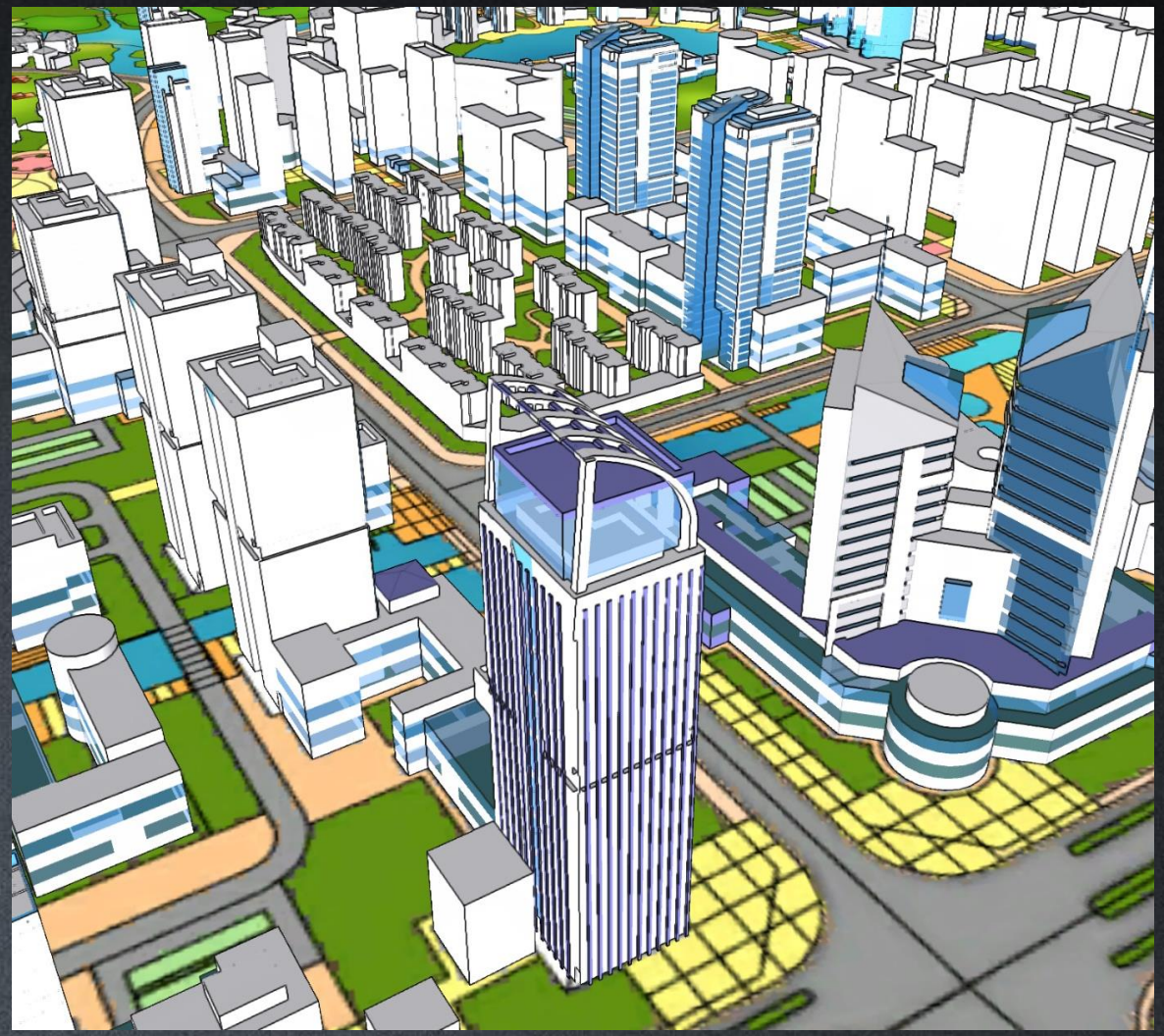
Big Screen

Data Model

Object Model-represent Discrete Objects

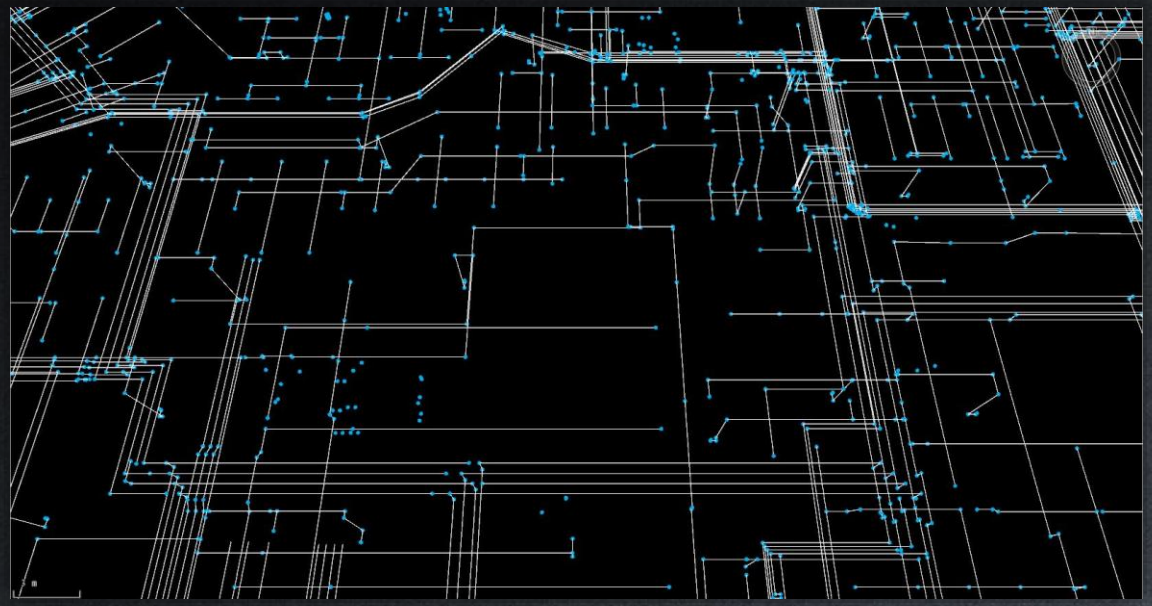


2D Point, line, Polygon

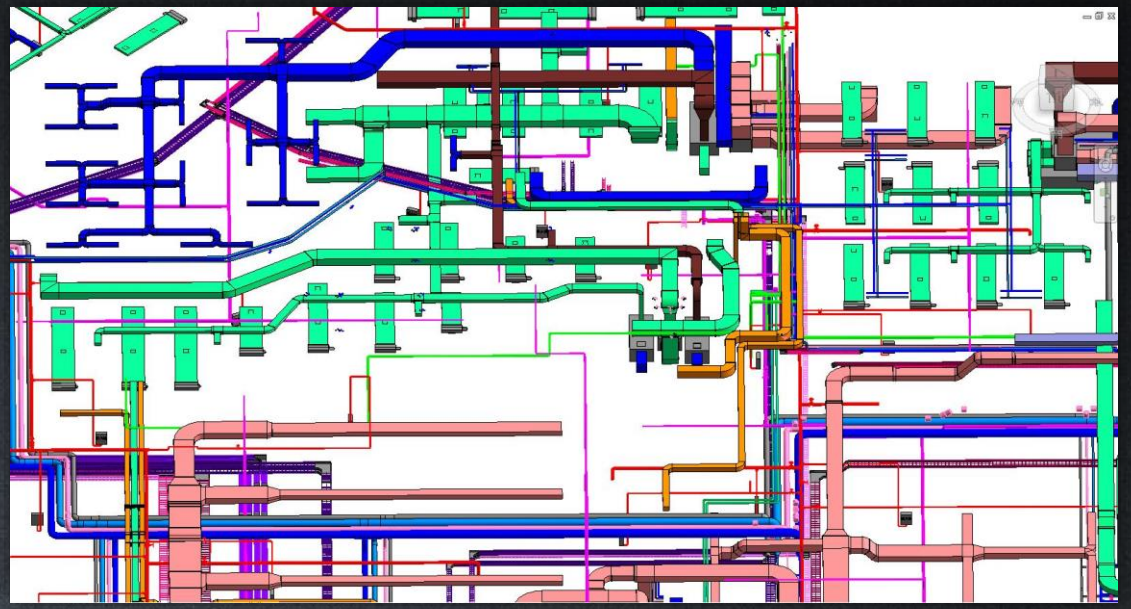


3D Point, line, Polygon, Solid

Network Model - Represent Connection Relationships



3D Network Data Model

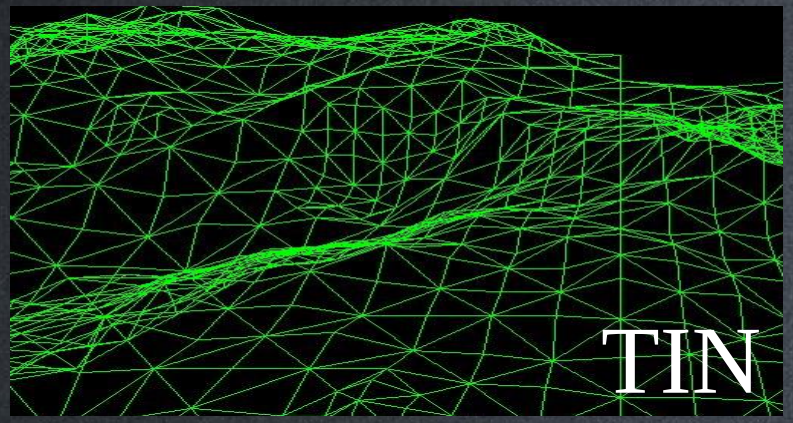


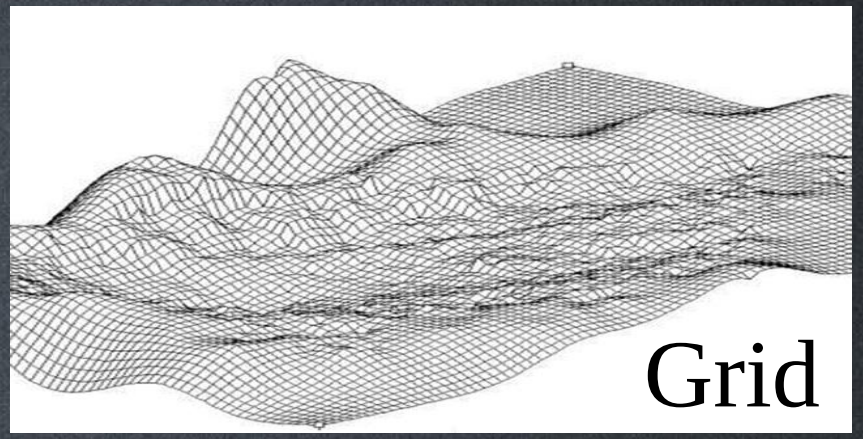
BIM：Road, Pipeline …

Field Model - Represent Continuous Surfaces (2.5D)

Oblique Photography

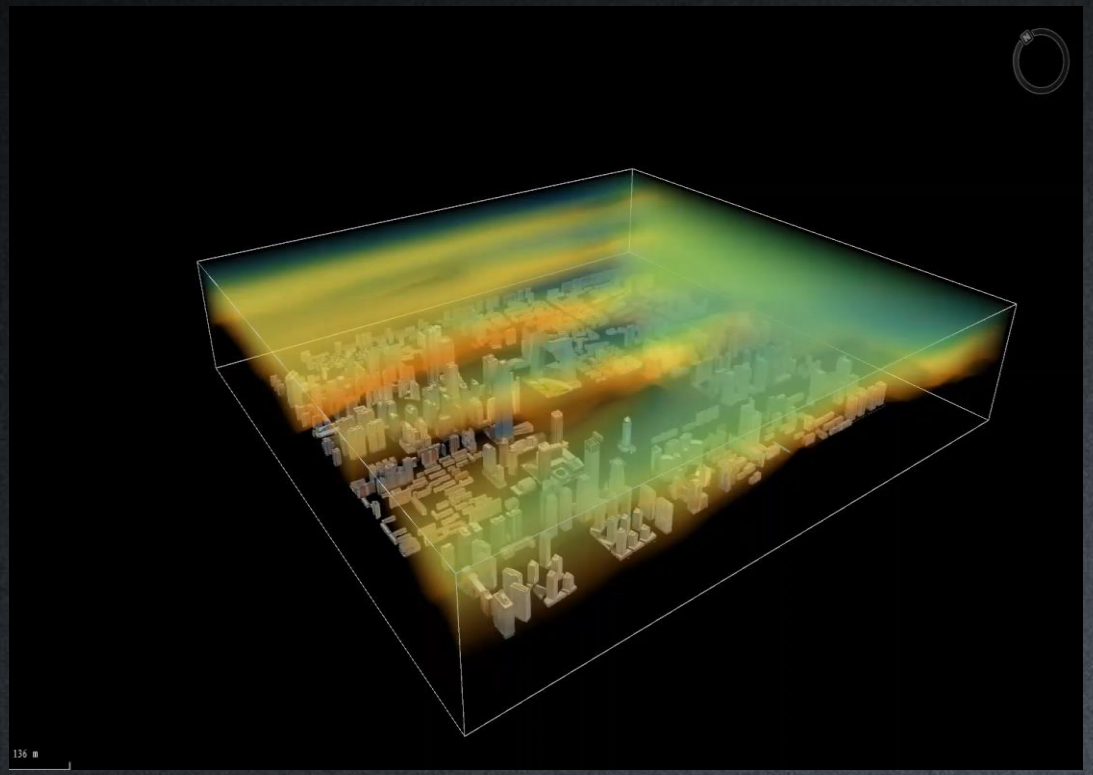
Terrain



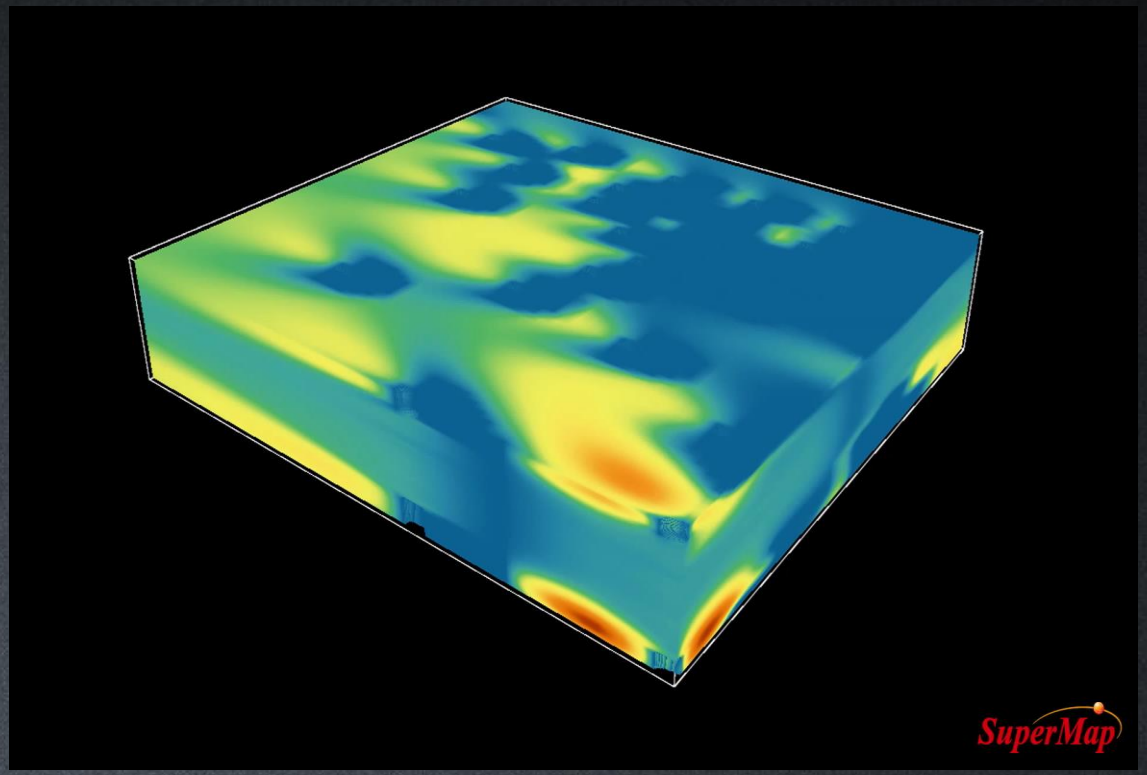


Voxel Grid - More Applications

——Direct Loading

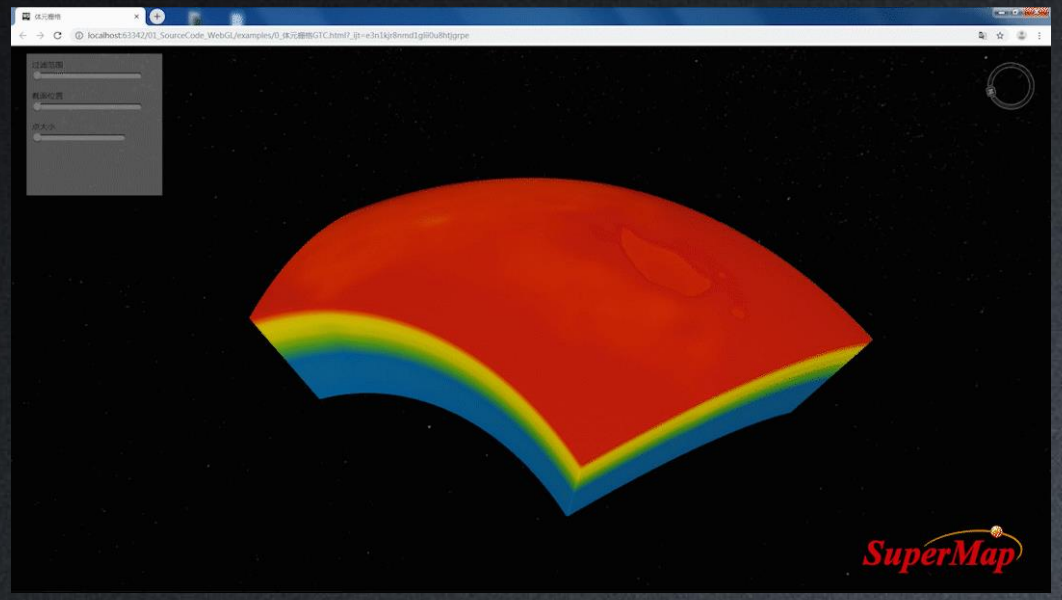


Pollution Field-filter And Dissipate



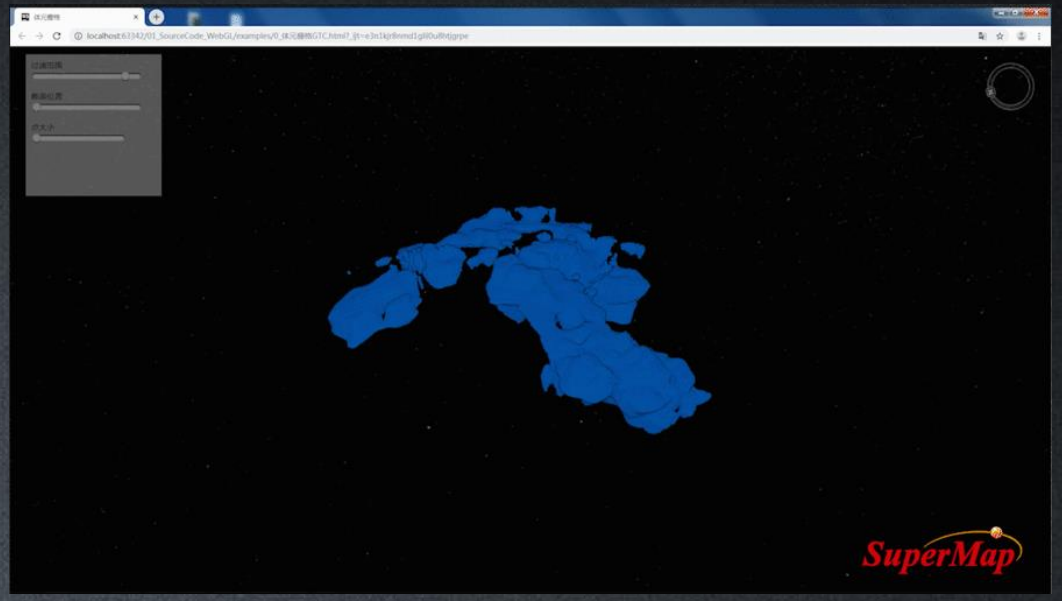
Pollution field - Dynamic Section

Extracting 3D Model of Wave Velocity Value in Seismic Wave Velocity Field



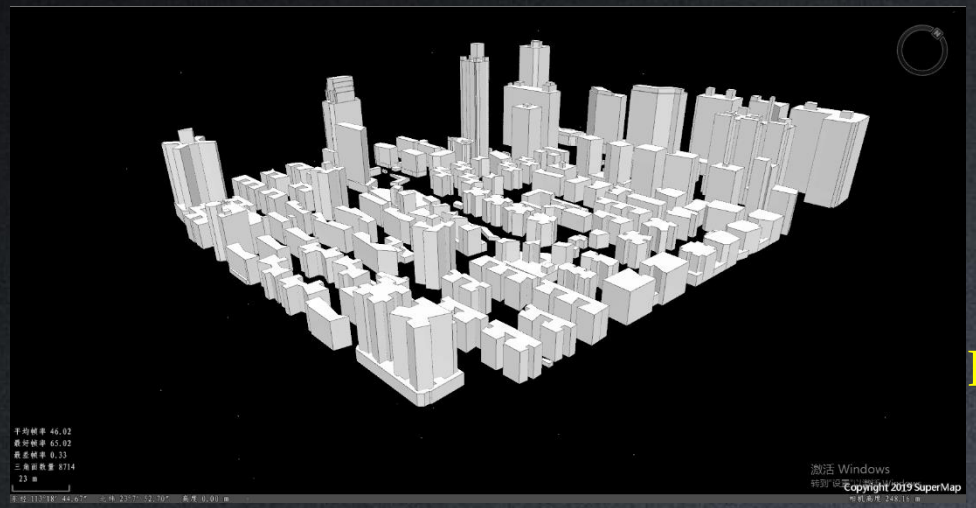
Seismic Wave Velocity Field (Voxel Grid)

Extract Isosurface



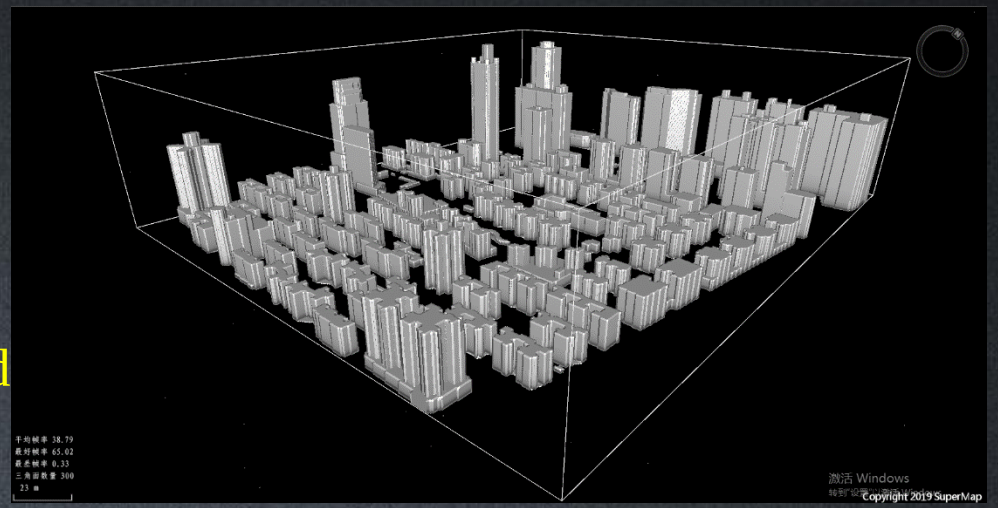
3D Model of an Instinct Wave Velocity Value

Superposing Heterogeneous Property Field on Solid



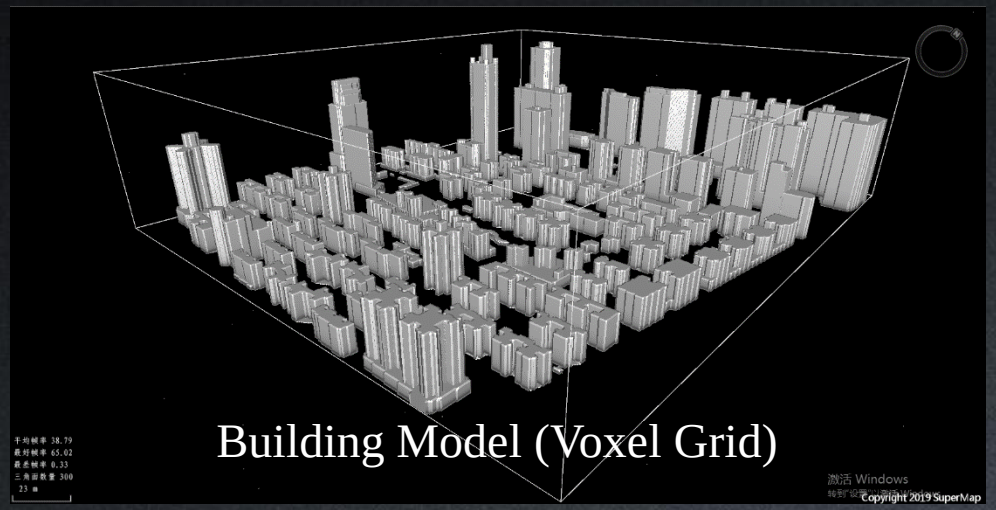
Building Model (3D Model)

Pixelated

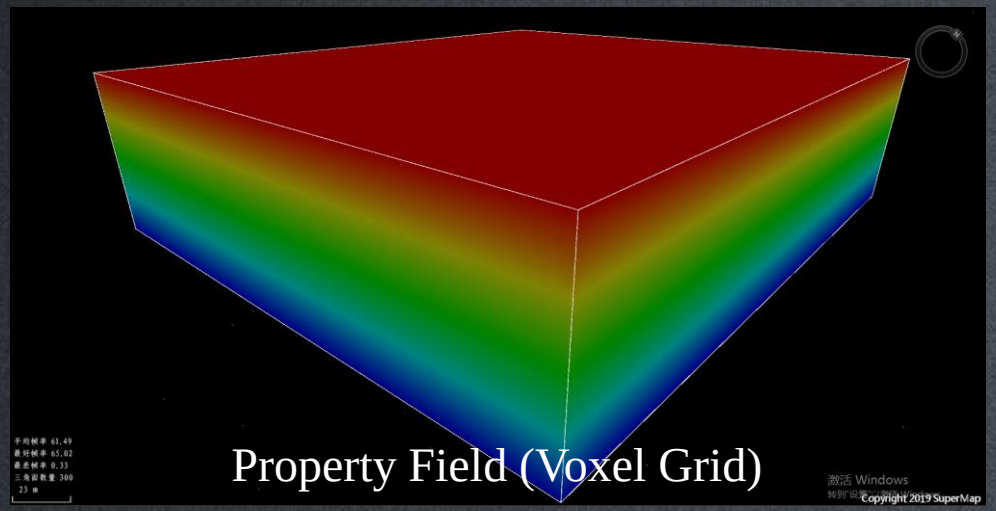


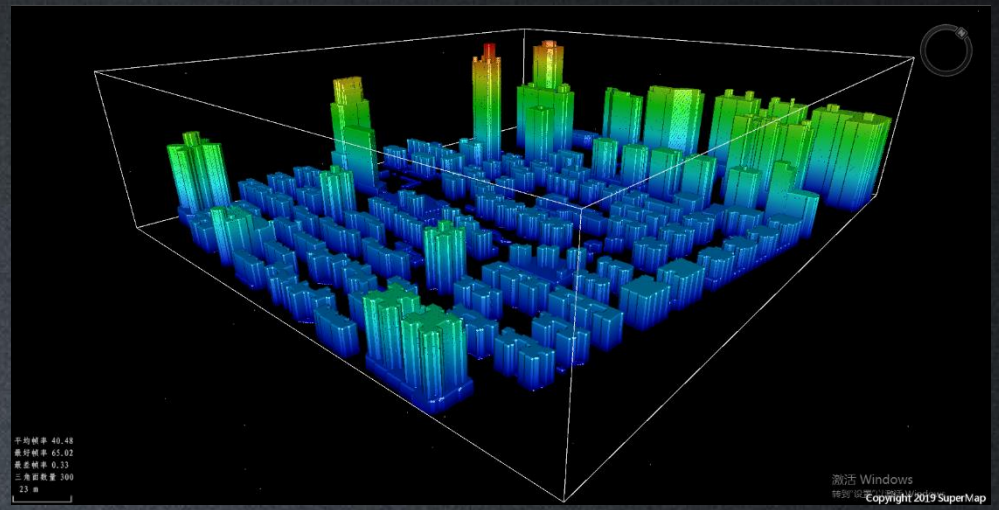
Building Model (Voxel Grid)

Superposing Heterogeneous Property Field on Solid



Algebraic Operation

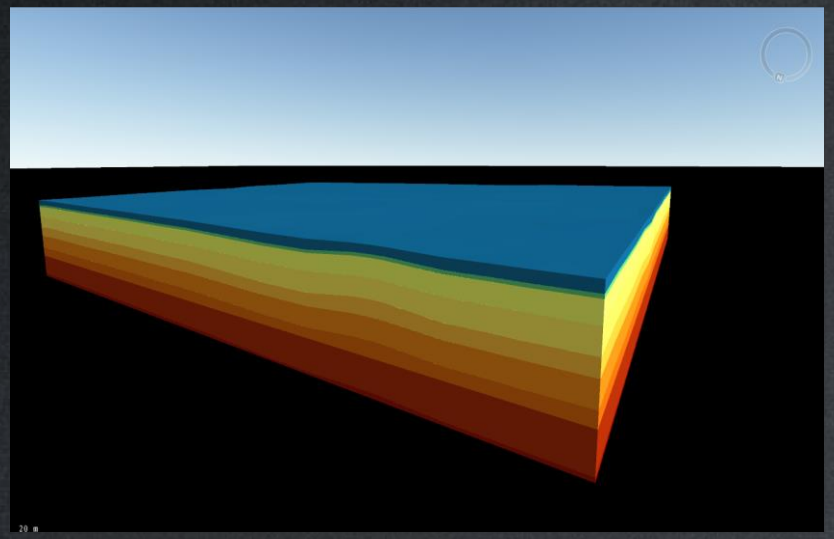




Solid

Voxel Grid

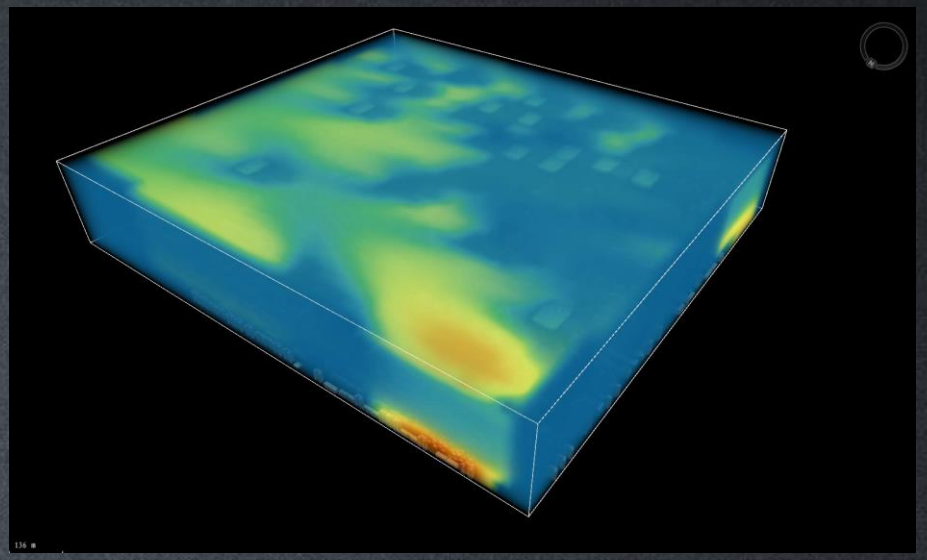
Representing 3D Object with Well-defined Boundaries



Voxelization

Extract Isosurface

Representing 3D Object with Continuous and Heterogeneous Attribute Field

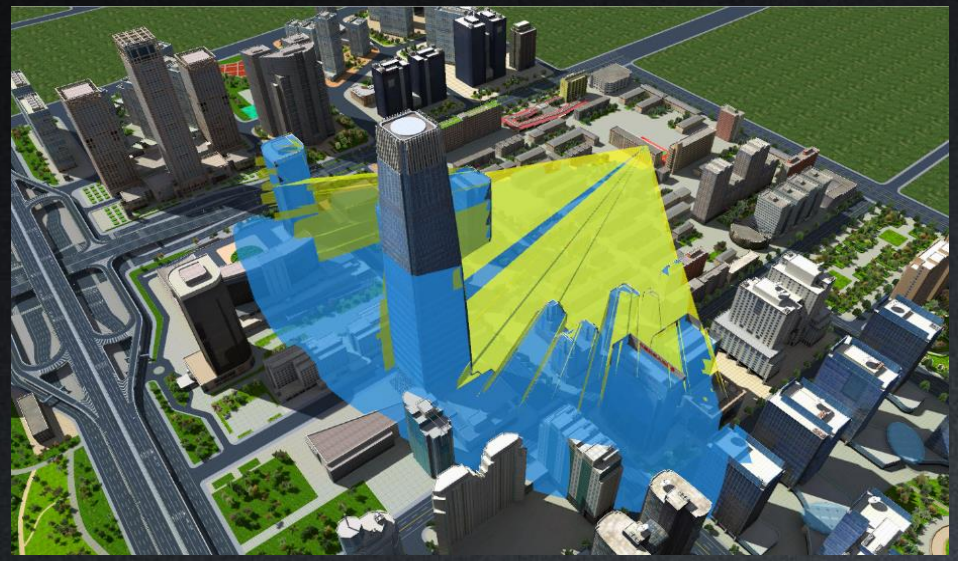


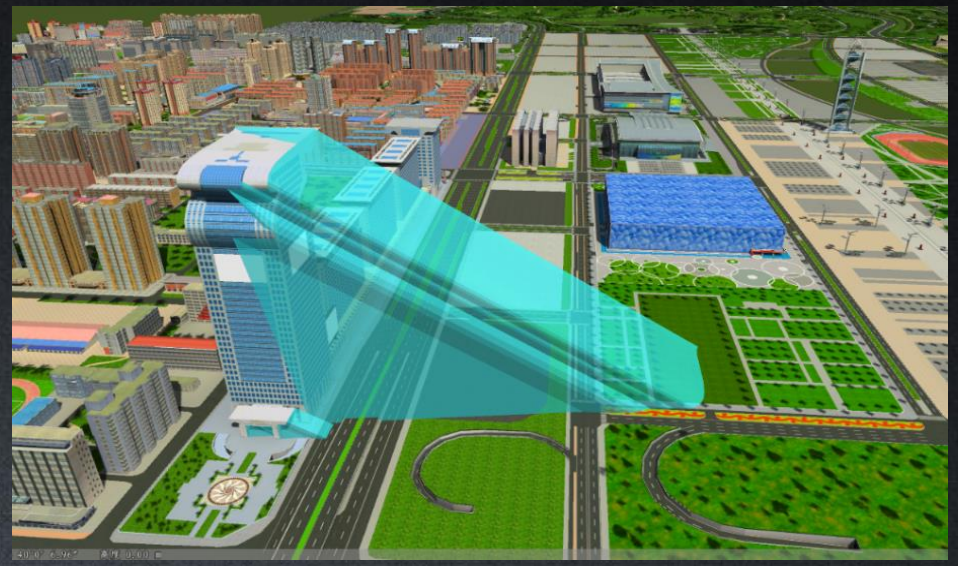

Sky：TIM、Voxel Grid
Surface：Solid、TIN、Grid、Network
Underground：Solid、TIM、Voxel Grid 、Network

3D Spatial Operation


SuperMap iEarth
localhost:63342/SuperMap-iEarth/index.html?_ijt=sgu4d8dvhu49l2c1o1slk0klur
小区诊所服务范围
A诊所
C诊所
B诊所
3D Spatial Relationship Judgment
SuperMap

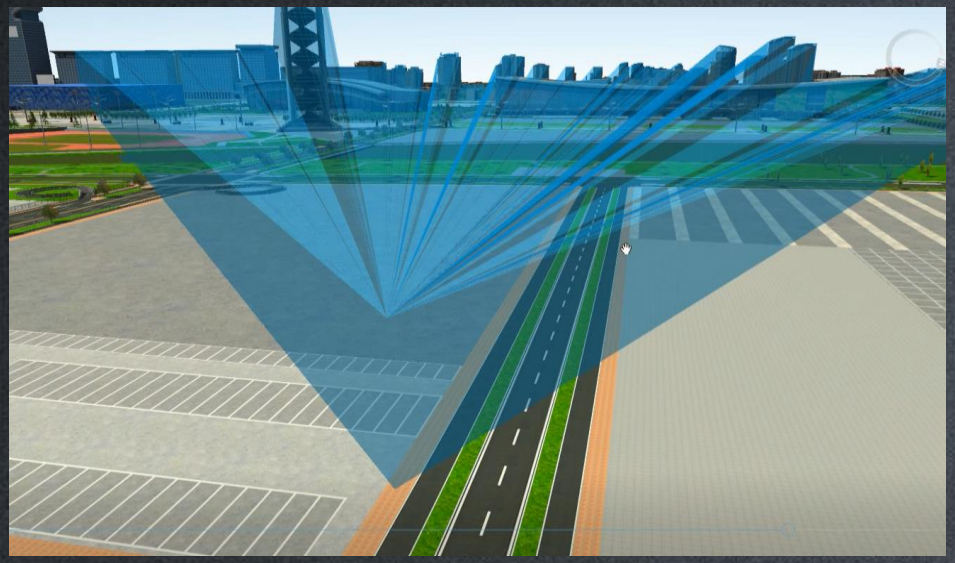
3D Feild Model (Spatial Analysis)





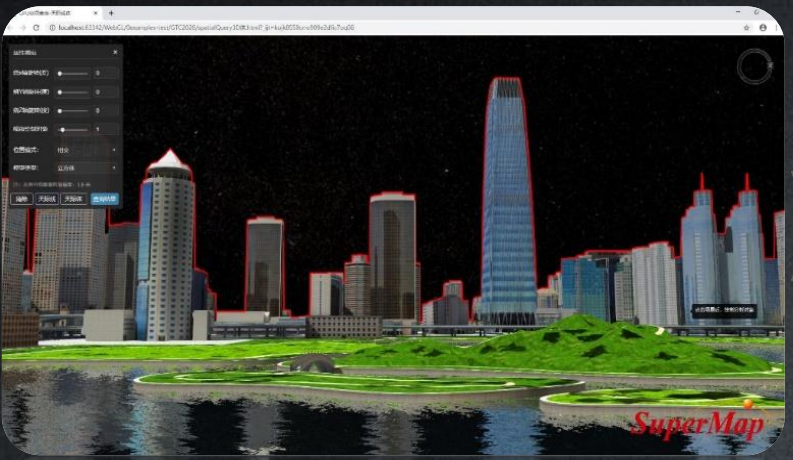
Visible Analysis | Shadow Analysis

Skyline Analysis | Openness Analysis

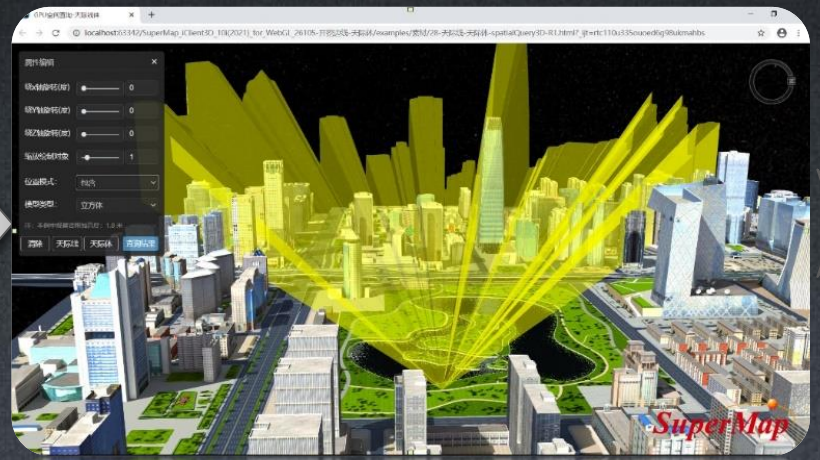


3D Spatial Query Based on Solid Analysis (GPU)

New (2020+)



Obtain Real Time Skyline



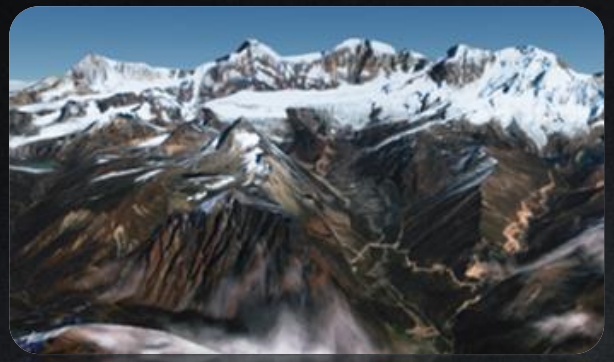
Extract Skyline Height Limit 3D Model

Search Buildings Intersected with Height Limit Model

3D Spatial Query Based on Solid Analysis (GPU)

Multi-source Data

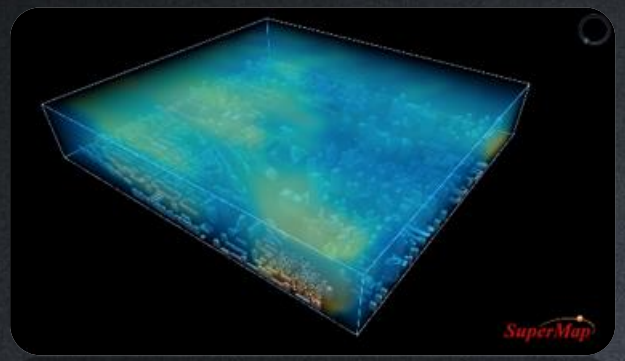
Multi-source 3D Data Integration



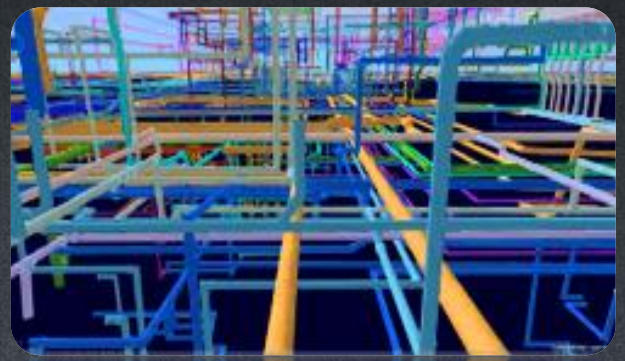
Terrain

Oblique Photography Model

BIM



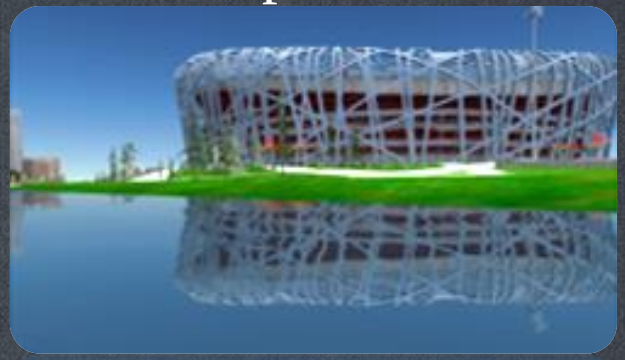
Field Data



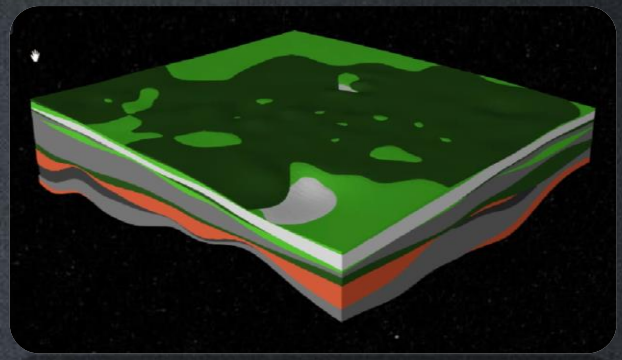
Pipeline

Point Cloud

Water Body

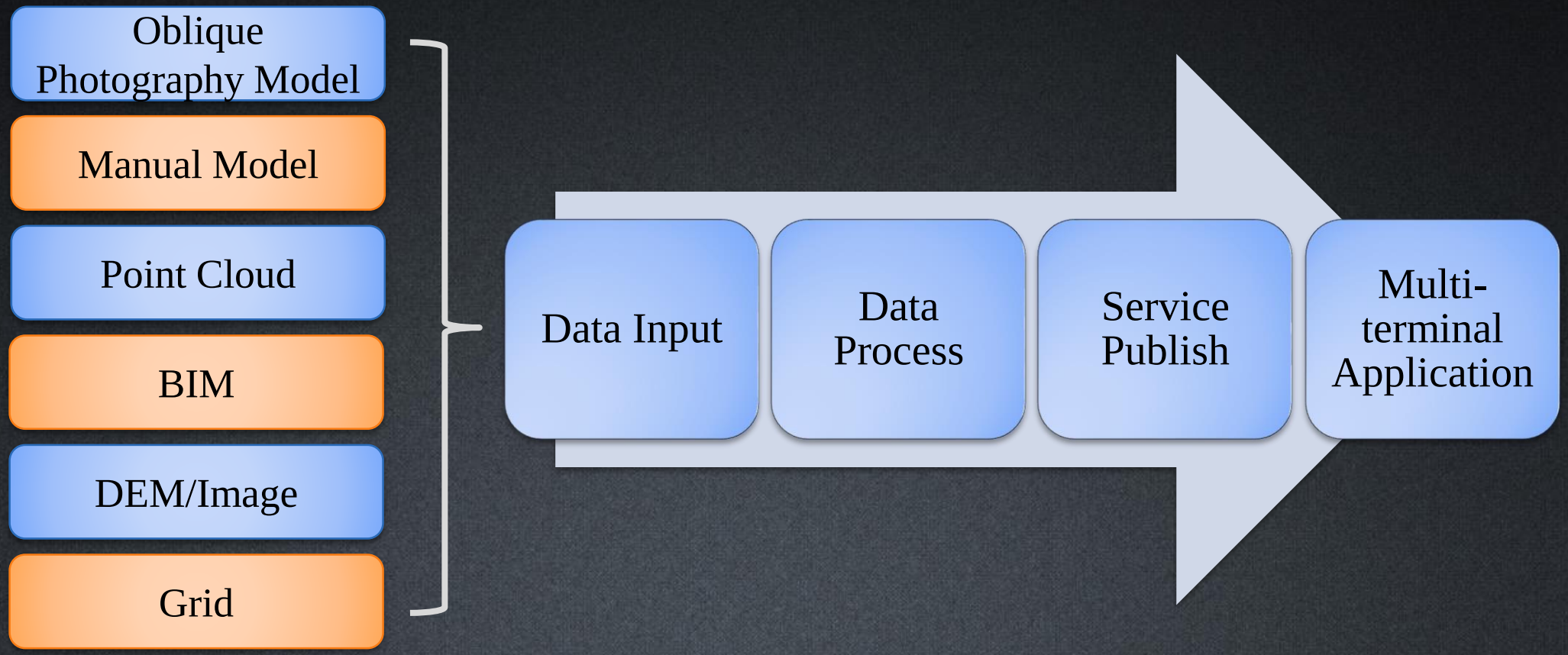


Fine Model



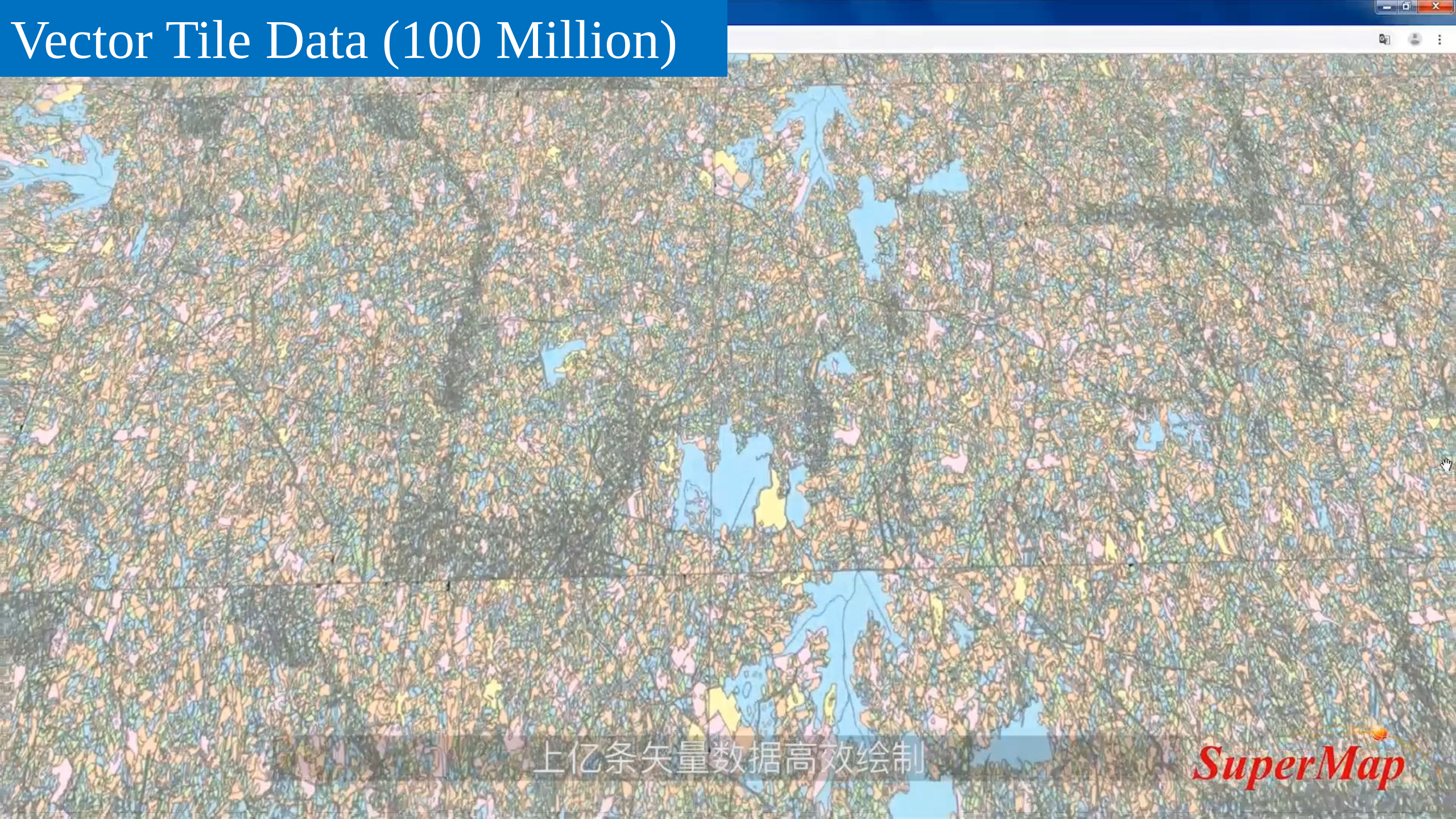
Geological Body

3D Data Full-process Management Based on Distributed Technology

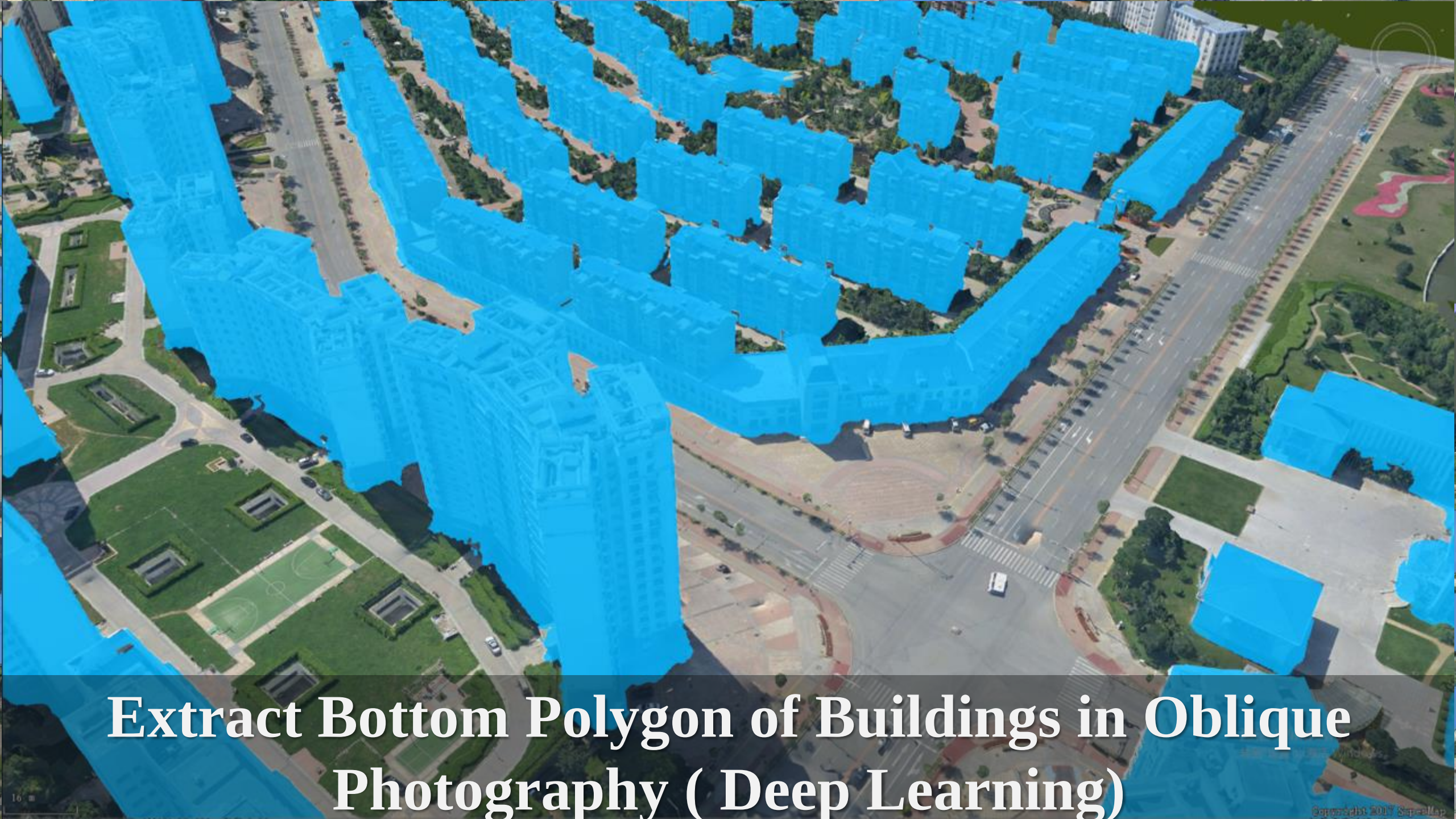


Vector Data （ Vector Tile）

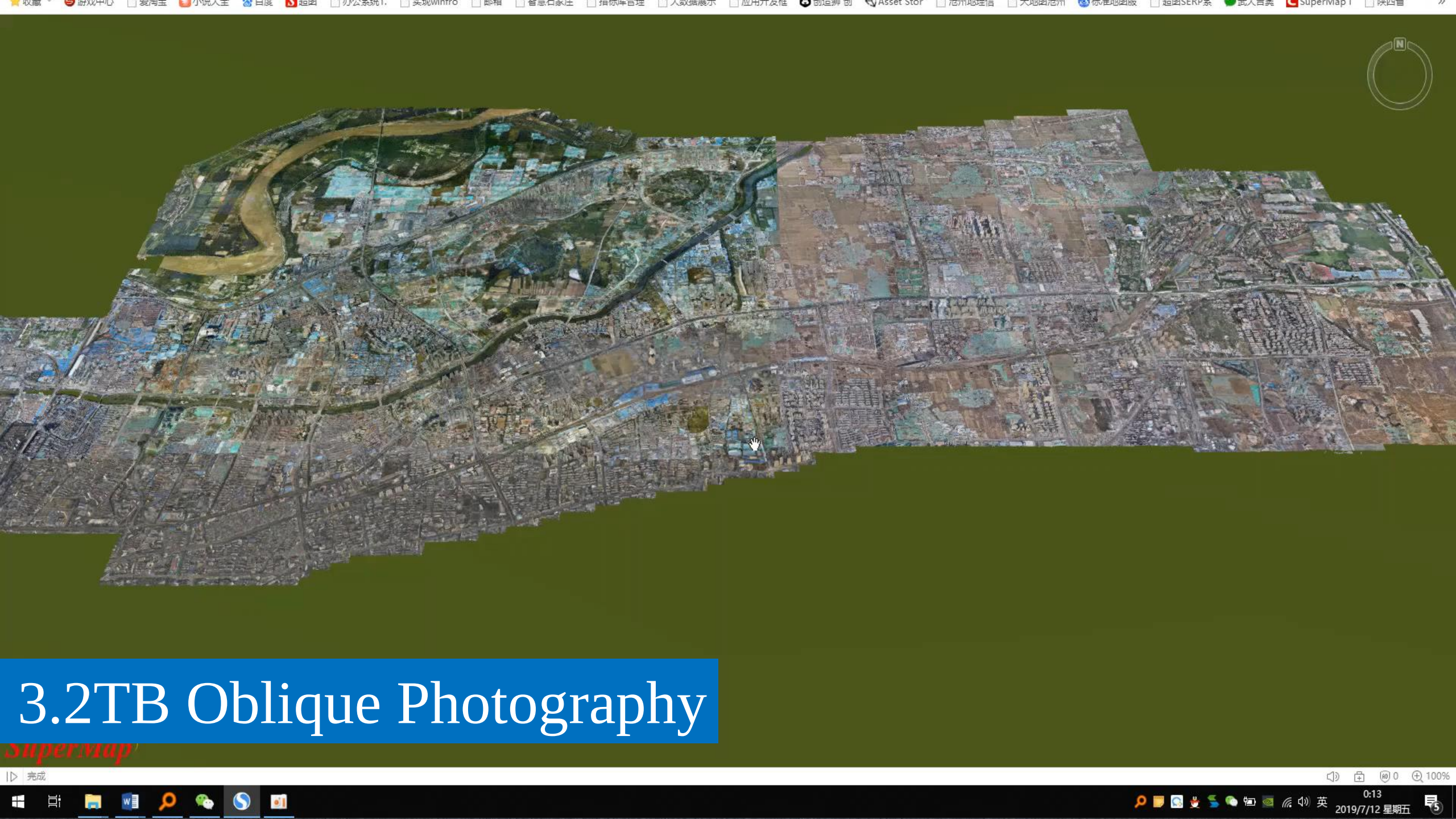
Vector Tile Data (100 Million)



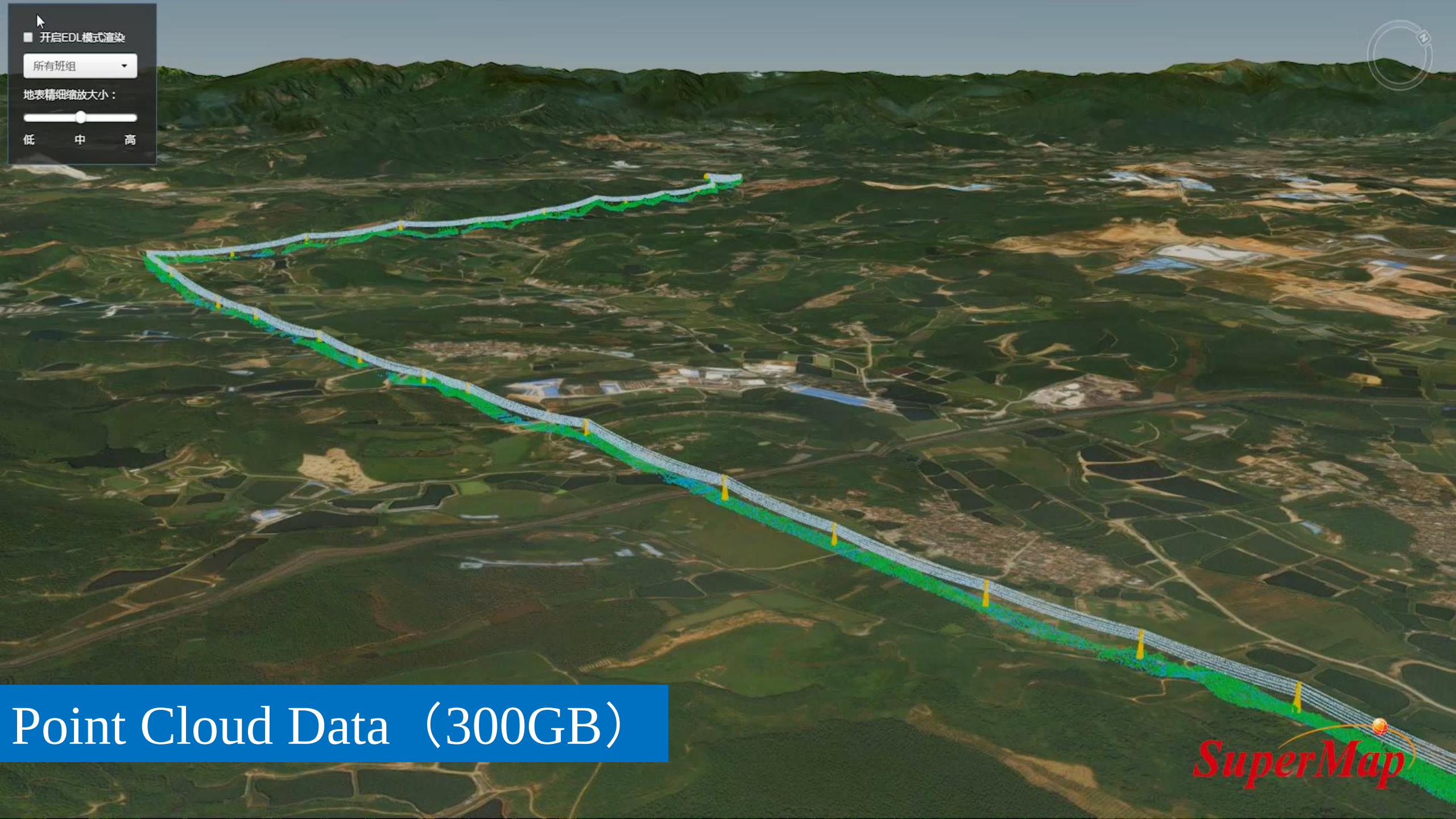
Oblique Photography



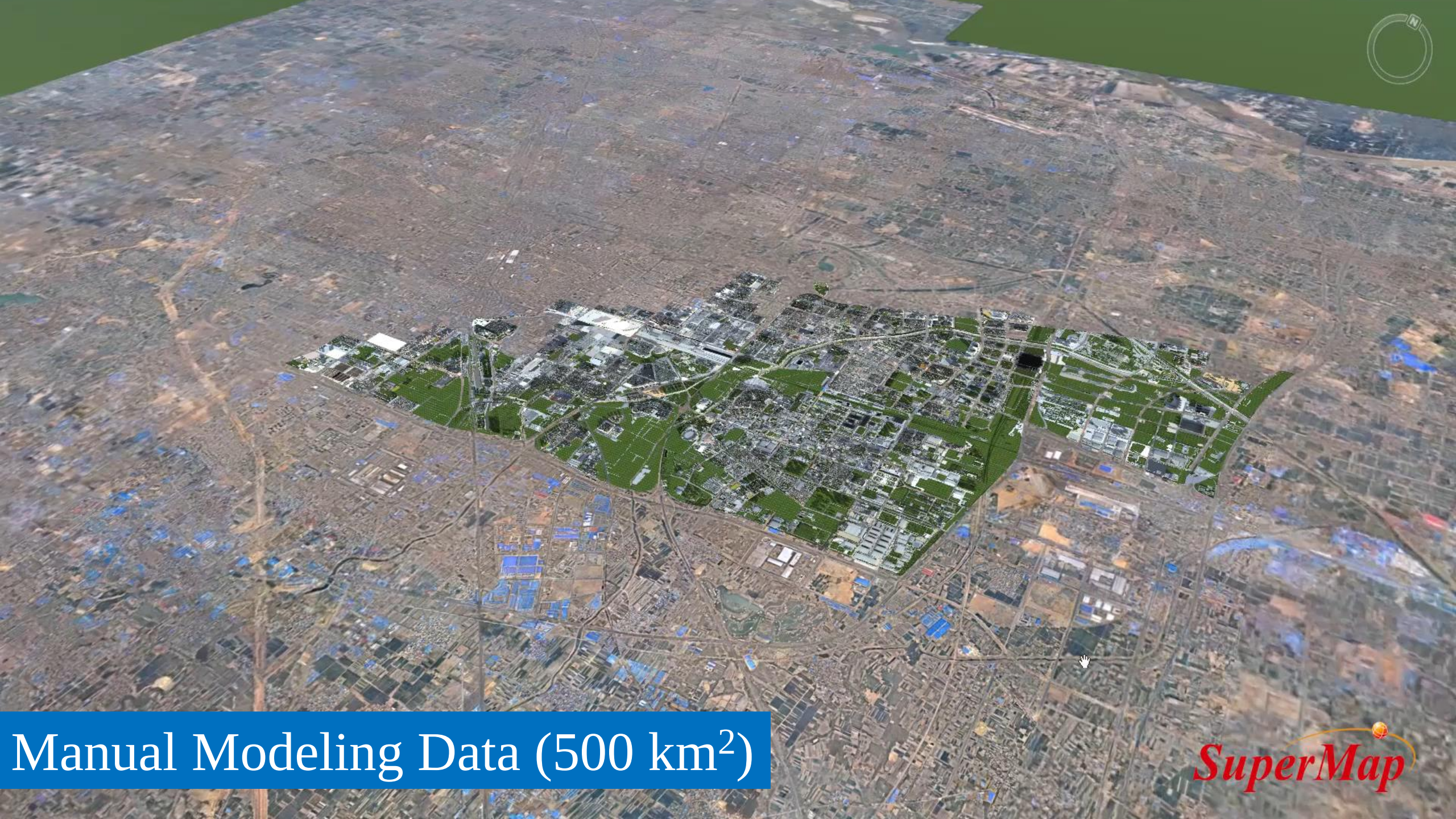
Extract Bottom Polygon of Buildings in Oblique Photography (Deep Learning)


3.2TB Oblique Photography

Point Cloud


开启EDL模式渲染
所有班组
地表精细缩放大小：
低
中
高
Point Cloud Data（300GB）
SuperMap

Manual Modeling


Manual Modeling Data (500 km²)
SuperMap

3D GIS Interaction

Smart City Operation & Management Platform

17:30:18
2019年05月24日星期五

16 Rainy-Cloudy

PUBLIC SAFETY

Today's Event
332 件

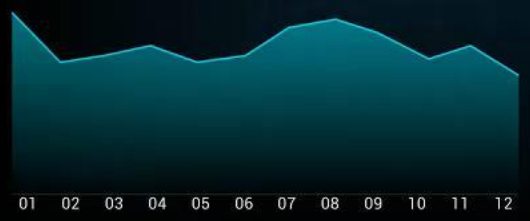
Online Officer
271 人

Online Vehicle
48 辆

Ambulance
13 辆

Supervision Point
9 个

Pyramid Selling Warning Tendency



Accidence Proportion

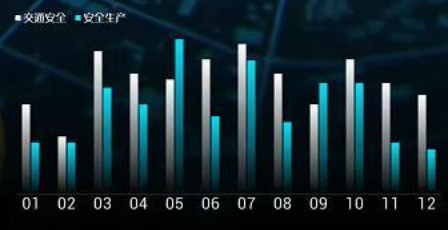
Transportation 18%
Production 45%
Fire Control 18%
Food 19%

Accidence Tendency

682 件
Transportation

425 件
Production

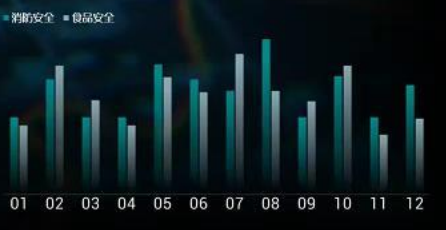
Production



Accidence Tendency

579 件
Fire Control

461 件
Food

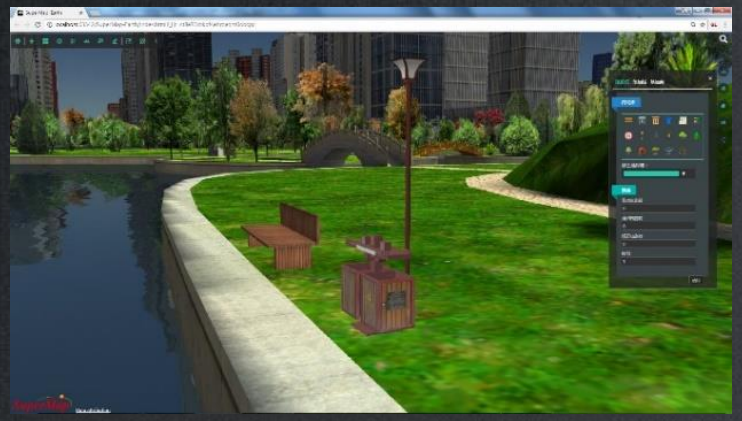


Full Function

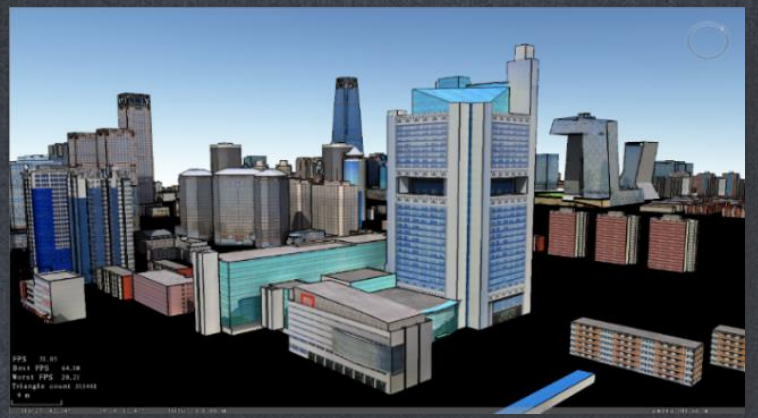
Area Clip

Measure

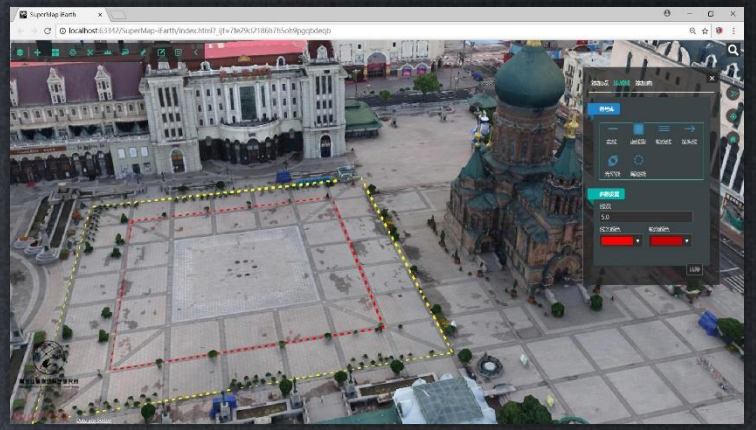
Spatial Analysis



Configure Scene Online

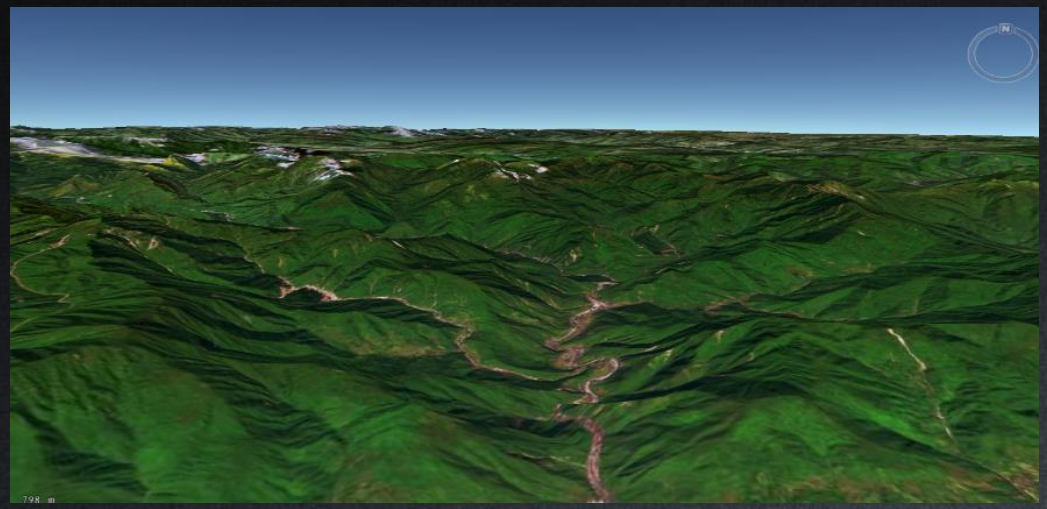


Visualization



Mapping

Carrying Capacity for Large-Scale Scene



TB-level Terrain And Video

Large-scale Vector Data (100 Million+)

500KM2 Fine model

TB-level Oblique Photography, Dense Point Cloud

Typical Application

Government Plan

Demolition Management

Industrial land

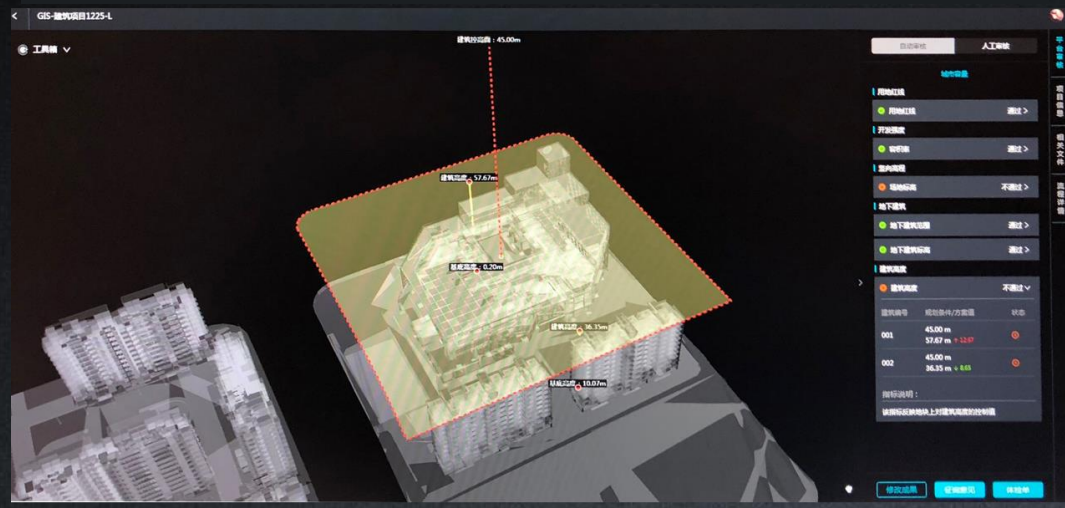
Click here to search land information

Smart Community

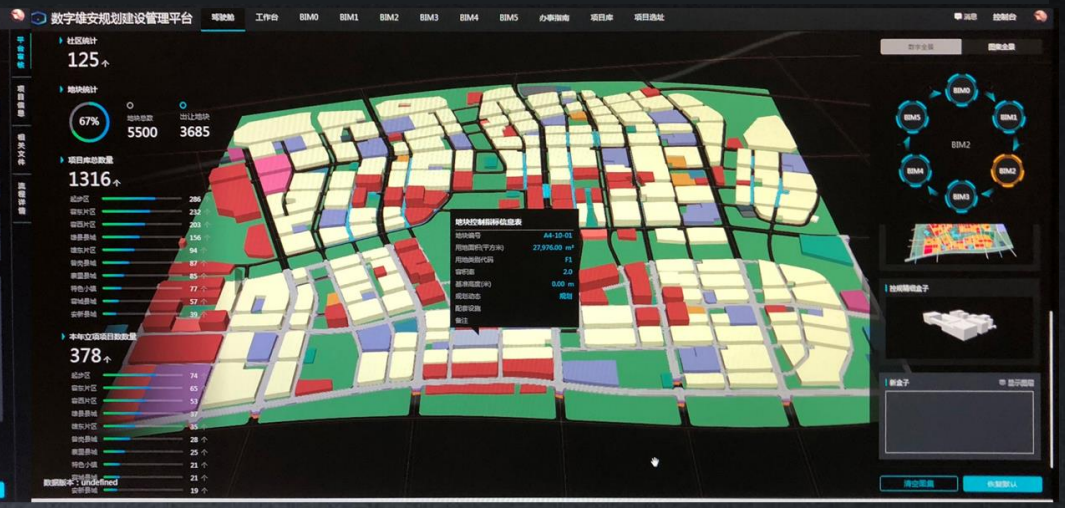
Traffic Planning And Design

Planning Application System

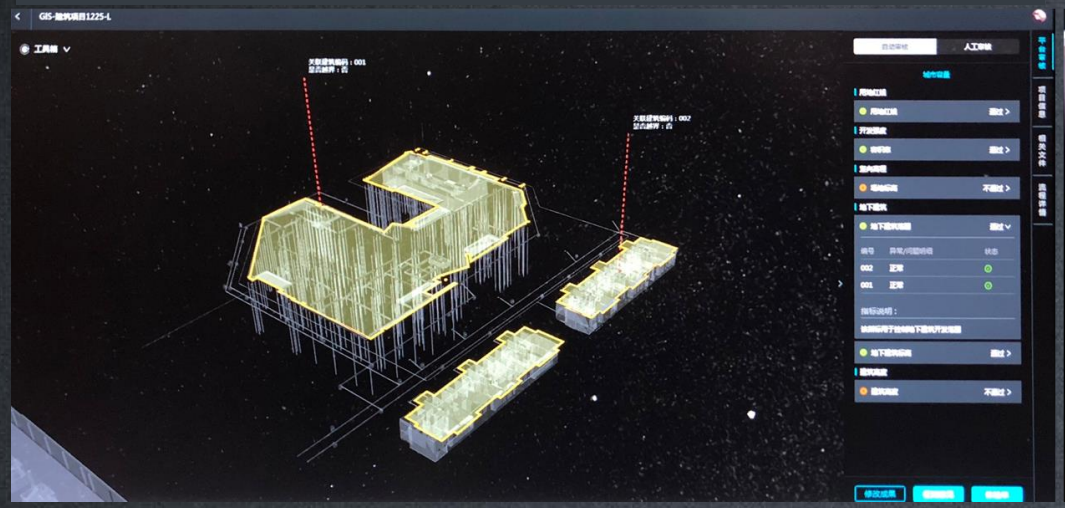
Above-ground Space Verification



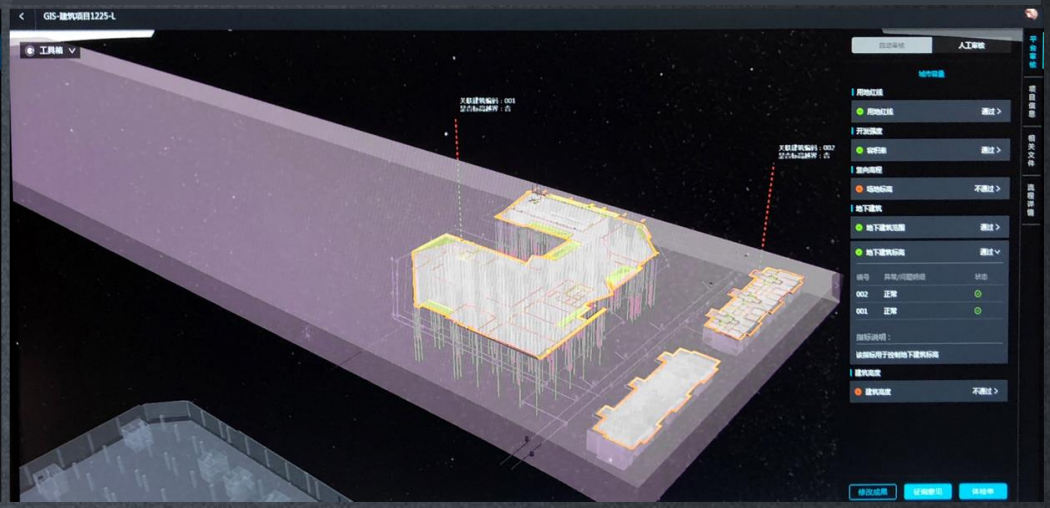
Regulation Range Box



Above-underground Elevation



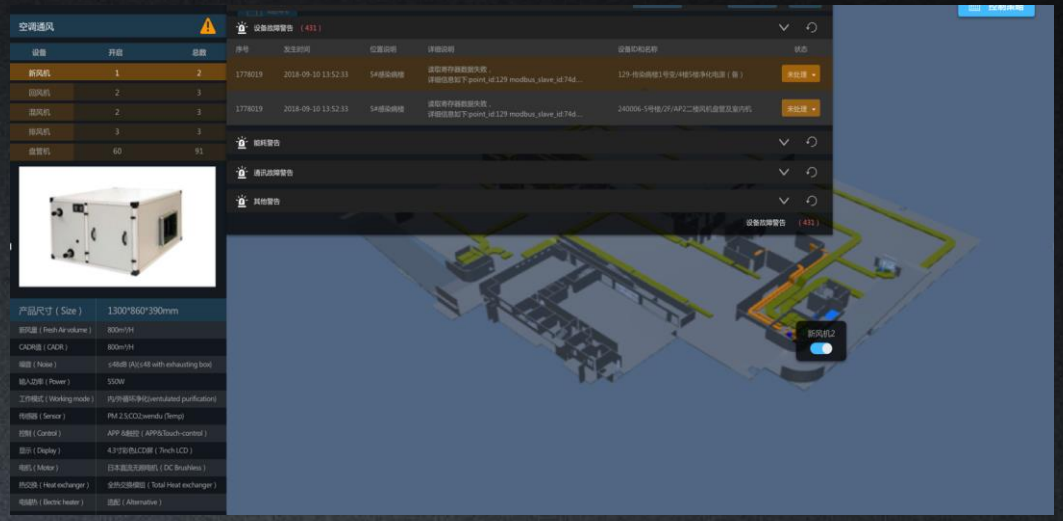
Above-underground Building Range



Urban New District Planning

BIM/CIM Application

Equipment Check



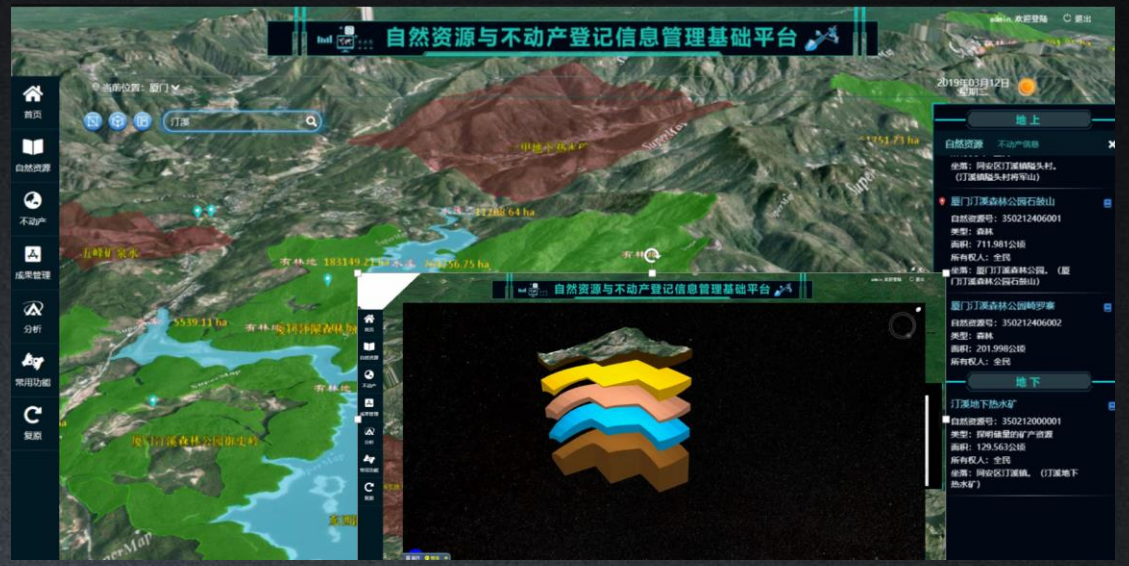
Facility Maintenance

Park Energy Consumption Analysis And Optimization

Security Facilities Integration

Natural Resource Space Management

Display Natural Resource Space Layout



Above-ground And Underground Integrated Management

Ecological Regular Line Distribution

Real Estate Management