The Development of SuperMap GIS Software and the Requirements & Suggestions of International Standardization

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SuperMap Software Co., Ltd.
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SuperMap Foundation

- China Academy of Science
- June 18, 1997
Listed in Stock Exchange Market in 2009

A Public Listed GIS Company
Company Profile

38 Branches & Offices

- Headquarters
- Subsidiaries
- Branches
- Offices

Staff 4,000+
Purpose Statement

To Innovate IT Value with Geo-intelligence
Annual Revenue (2014 – 2017)

(Millions USD)

2014: 56.4
2015: 72.9
2016: 122
2017: 194

SuperMap 31.6%
ESRI 29.0%
MapGIS 7.9%
GeoStar 5.9%
Skyline 5.3%
GviTech 2.0%
EV image 1.2%
Others 17.1%

Data from: CMIC 2016.09
700+ Partners
—Partner Ecosystem
International Business
Architecture of SuperMap GIS Platform

Terminal GIS for PC
- SuperMap iObjects Java *
- SuperMap iObjects .NET *
- SuperMap iObjects C++ *
- SuperMap iDesktop Java *
- SuperMap iDesktop .NET *

Terminal GIS for Browser
- SuperMap iClient JavaScript
- SuperMap iClient Python
- SuperMap iClient3D for WebGL *
- SuperMap iClient3D for Plugin *

Terminal GIS for Mobile
- SuperMap iMobile *
- SuperMap iTablet *
- SuperMap iMobile Lite *

Cloud GIS Server
- SuperMap iServer *
- SuperMap iPortal *
- SuperMap iManager

Edge GIS Server
- SuperMap iEdge *

* 3D Enabled

Linux Supported
SuperMap GIS  Key Technologies

SuperMap GIS Platform Software

Cross Platform GIS
Cloud Native GIS
New Three Dimension GIS
Big Data GIS

Software and Hardware Infrastructure
Cross-platform GIS

Windows

• Windows 2003 or above

Linux

• Redhat Linux
• Suse Linux
• Ubuntu Linux
• Kylin - Linux
• Redflag - Linux
Mainstream Cloud Computing Platform Supported

- Commercial
- Community
- Open Source
- Chinese
- Mature
New Generation of 3D GIS

SuperMap 3D GIS

- 2D & 3D Integration
- Oblique Photogrammetry
- BIM
- GPU analysis
- WebGL (plugin free), various data sources
2D & 3D Integrated: Symbols
2D & 3D Integrated: Lines
2D & 3D Integrated: Surfaces
3D GIS Analysis

Thematic Mapping

Measure Dist./Area

Buffer Analysis

Visibility Analysis

Viewshed Analysis

Skyline Generation
Visibility Analysis (video)
Dynamic Viewshed (video)
Slope/Aspect Calculation (video)
Contours (video)
Support WebGL

WebGL Makes 3D Simple

01 Installation free
02 Plugin free
03 Data download free
04 Desktop browsers supported
05 Mobile browsers supported
06 Touch screen supported
What Data Model Can be Used to Represent Continuous and Non-homogeneous 3D Space?

<table>
<thead>
<tr>
<th>Air Property Field</th>
<th>Electromagnetic Field</th>
<th>Geological Property Field</th>
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<tr>
<td>• Pollution</td>
<td>• Wireless Signal</td>
<td>• Density</td>
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<td>• Temperature</td>
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<td>• Porosity</td>
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<tr>
<td>• Humidity</td>
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<td>• Young's Modulus</td>
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<td></td>
<td></td>
<td>• Poisson's Ratio</td>
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</tbody>
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Grid $\rightarrow$ Voxel Grid
Dynamic Filter of Voxel Grid According to Value Ranges
(Illumination Duration)
Air Pollution Represented with Voxel Grid
Dynamic Filter of *Voxel Grid* According to Value Ranges (Air Pollution)
Dynamic Cutting of **Voxel Grid** (Air Pollution)
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<th>Standardizations in Service GIS</th>
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<td>《Geographic information -- Web map server interface》 （ISO 19128:2005，WMS）</td>
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<td>《Geographic information -- Web feature service》 （ISO 19142:2010，WFS）</td>
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<td>《Web Coverage Service Interface Standard》 （OGC，WCS）</td>
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<td>OGC KML standard</td>
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<td>《OpenGIS Web Map Tile Service》</td>
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<tr>
<td>《Geography Markup Language Encoding Standard》 （OGC，GML）</td>
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</tbody>
</table>
Standardizations in Mobile GIS

- Web Service Context GeoJSON Encoding Standard (OGC, GeoJSON)
- Advanced Message Queuing Protocol (AMQP)
- Message Queuing Telemetry Transport
- Simple Text Oriented Messaging Protocol
- Geographic information – Location-based services - Multimodel routing and navigation (ISO 19134:2007)
Standardizations in Desktop GIS

《Geographic information -- Spatial referencing by coordinates》

OpenGIS® Simple Features Interface Standard

Geographic information—Spatial referencing by coordinates
More Standards

1. 《OpenSearch Geo and Time Extensions》
2. 《Geographic information -- Content components and encoding rules for imagery and gridded data -- Part 1: Content model》
3. 《Geographic information -- Positioning services》（ISO 19116:2004）
4. 《Geographic information -- Services》（ISO 19119:2016）
5. 《Geographic information -- BIM to GIS conceptual mapping (B2GM)》
Thanks!