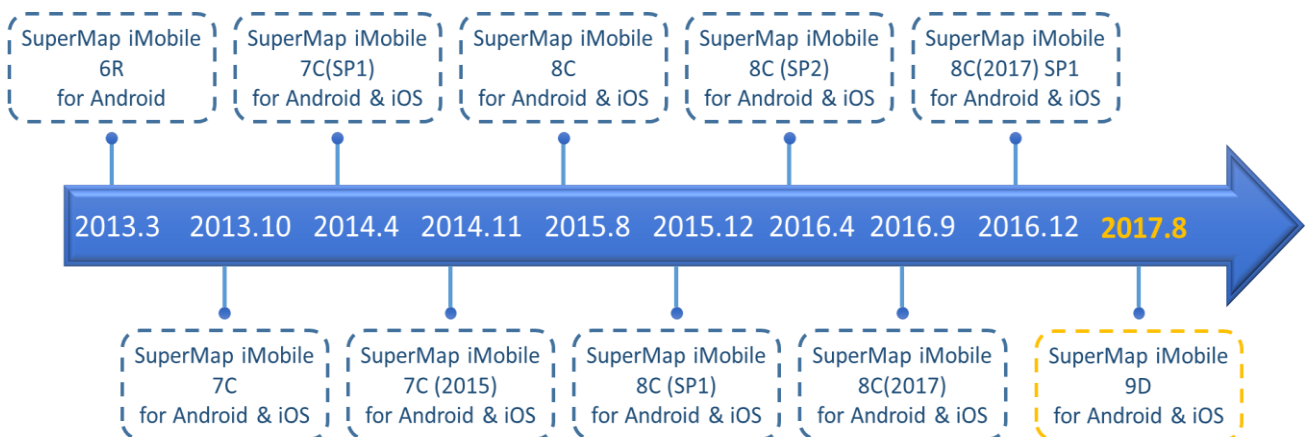## What is SuperMap iMobile 9D?

SuperMap iMobile is a mobile GIS development platform developed based on SuperMap UGC(Universal GIS Core). It inherited and played professional experience that the SuperMap has accumulated in GIS field. The smartphone for Android and iOS system is supported, you can develop online and offline mobile GIS applications.

Who needs SuperMap iMobile 9D?

- Professional data acquisition product developers

- Mobile GIS product developers for industry

- Mobile GIS product developers for public application

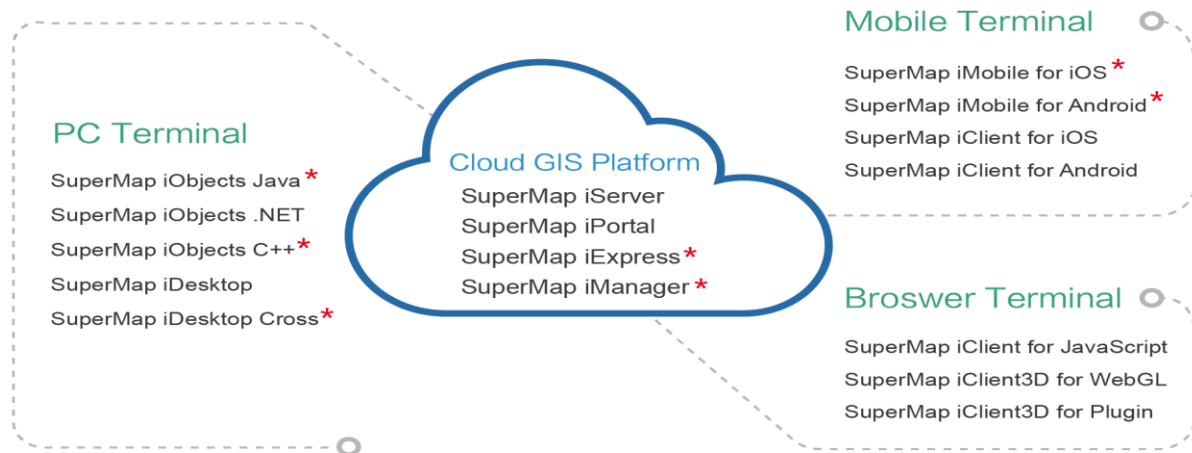## SuperMap iMobile history

What can SuperMap iMobile 9D do?

- It is a professional mobile GIS development platform which covers GIS functions on all sides.

- OpenGL, the map display engine. SuperMap iMobile 9D make use of the OpenGL's advantage in patch rendering, text rendering and anti-aliasing to improve the map display effects, and that makes the effect for drawing map more beautiful. At the same time, the map display performance is greatly enhanced through using the OpenGL overall rendering mode.

- In addition to supporting a wide range of online map services, but also supports strong offline data. It can be used extensively in various special scene. Such as: the mobile network signal is not covered, mobile network traffic is limited, data confidentiality, high-performance mobile GIS, and so on.

- The common data format is provided for iMobile, iDesktop and iServer, when you cross the platform exchanging the data , you do not need to change the data format.

- Supporting to load tiles package data of GL map online or offline, that greatly improves the map display performance.

- Supporting the rich data visualization effects, that makes the big data is displayed well in iMobile.

- Message bus function, support interoperability between multiple terminals. The executed operation in a terminal can be quickly synchronized to other related terminals to achieve the functions about data sharing and instant messaging.

- Supporting situation plotting function, providing a variety of marker symbols and arrow symbols for plotting.

- High performance two or three dimensional integration. High-precision three-dimensional model is supported for iMobile. Support watermark, flame, fountain, cherry and other animation effects.

- It is supported that browsing oblique photogrammetry modeling data online or offline, selecting an object to highlight, and querying spatial information and attribute information of monomer model.

- The integration of GIS and GPS largely improved the convenience and effectiveness of GIS tasks for both indoor and outdoor activities.

- Through suppporting for three international standards AMQP, MQTT and STOMP, SuperMap iMobile 9D achieve GIS data messaging by the modes of broadcast or peer to peer, and thus achieve multi-end collaboration and data distribution.

- Providing the free development tool iMobile for ReactNative based on ReactNative, users can develop mobile GIS applications operating in Android or iOS through using javascript based on the tool.

SuperMap GIS 9D provided by SuperMap Software Ltd, which is a GIS platform of new architecture with cloud-terminals integrated technology providing a powerful GIS cloud-manager, cloud-GIS portal platform, servers for GIS application and GIS distribution as well as PC terminal, Web terminals, mobile termials and developing package, based on cross-platform, 2/3D integration and cloud-terminals integration. Be able to assist users to create a interconnectable, stable and reliable GIS system with strong cloud and rich ends.

You can easily build a powerful cross-platform GIS service application based on the cloud-GIS platform software provided by SuperMap GIS 9D series (iServer, iPortal, iExpress, iManager etc) Based on the GIS-terminal products provided by SuperMap GIS 9D series (iObjects, iDesktop, iMobile, iClient etc), you can easily build the multiple cross-platform clients-terminals for docking GIS service platform and online GIS platform etc; while 2/3D integration technology accross through all products, to assist you to build gorgeous and practial 3D applications.

PC Terminal

SuperMap iObjects Java *
SuperMap iObjects .NET
SuperMap iObjects C++ *
SuperMap iDesktop
SuperMap iDesktop Cross *

Cloud GIS Platform
SuperMap iServer
SuperMap iPortal
SuperMap iExpress *
SuperMap iManager *

Mobile Terminal ○

SuperMap iMobile for iOS *
SuperMap iMobile for Android *
SuperMap iClient for iOS
SuperMap iClient for Android

Broswer Terminal ○

SuperMap iClient for JavaScript
SuperMap iClient3D for WebGL
SuperMap iClient3D for Plugin

Product with a * is original creation or has unique advantages of SuperMap

SuperMap GIS 9D Products

Cloud GIS platform software: four carriages

Four carriages of SuperMap GIS 9D are required for setting up GIS cloud and GIS server system. They are:

- SuperMap iManager 9D: GIS cloud manager. Be able to deploy the GIS service environment, for solving the issues in management for the cloud-GIS platform, while the GIS cloud manager conbining with other products of SuperMap GIS 9D series that formed the SuperMap cloud-GIS solution.

- SuperMap iPortal 9D: Cloud GIS portal platform. Supporting for integrating, sharing, finding and managing GIS resources, providing mapping online, customization portal and whole REST API. As an entrance for accessing inner GIS resources, it can reduce the cost in users searching, using and managing GIS resources.

- SuperMap iServer 9D: Cloud GIS application server. Based on high-performance GIS core and cloud computing technology, this server has its functionality that is able to publish, manage and group for the 2/3D integration services. This server also can build SOA application system and unique GIS cloud system by providing various terminals such as mobile, Web, PC for developing the SDK.

- SuperMap iExpress 9D: Cloud GIS distribution server. It can be as the agency of GIS cloud and terminal to enhance the cloud GIS terminal access experience through proxy server and cache acceleration technology. The provided ability of locally publishing 2/3D tiles, updating and pushing multiple nodes can be used to quickly build a cross-platform and low-cost WEB GIS application system.

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Terminals GIS platform software: working on n-terminal

The softwares for terminal GIS platform from SuperMap GIS 9D includes the following categories: a lot of products for PC, Web and Mobile, can be connected to the cloud GIS platform and SuperMap online GIS platform, providing the capability of map production, business customization, showing terminal, updating data.

- GIS development platform for object: SuperMap iObjects Java 9D, SuperMap iObjects .NET 9D, SuperMap iObjects C++ 9D.

    Full-featured GIS application secondary development platform for building GIS stand-alone system, C/S system, providing two types of API: Java, .NET.

- GIS development platform for desktop: SuperMap iDesktop 9D.

    Professional platform for GIS data processing, analysis, mapping. Supporting for extended development in .NET and customizing industry application rapidly.

- Browser terminal SDK: SuperMap iClient 9D for JavaScript, SuperMap iClient3D 9D for WebGL/Plugin.

    Providing the capability of 2/3D integration on Web.

- GIS development platform for mobile: SuperMap iMobile 9D for iOS & Android.

    Professional development platform for mobile GIS, providing professional GIS features, such as 2/3D integration of the collection, editing, analysis and navigation, supporting iOS&Android platforms.

- Lightweight Mobile SDK: SuperMap iClient 9D for iOS/Android.

    Lightweight, quickly developing, free GIS mobile development kit, supports for online connecting SuperMap cloud GIS platform and SuperMap cloud service, caching tiles offline, supports iOS&Android platforms.

It needs the permission of SuperMap to use SuperMap iMobile 9D product, in short, license. Here are some instructions of SuperMap iMobile 9D product license.

There are 2 kinds of SuperMap iMobile 9D product license: development license and running license.

- Development license: facing the further development users, SuperMap iMobile 9D development license contains development license of nearly all the functions (development license of other functions, please see below).
- Running license: used for further development users of SuperMap iMobile 9D to dispatch and deploy. Be authorized via running license by demanding.

Comparison table of software license and functionality module

Below is comparison of SuperMap iMobile 9D development license and running license to help search what functions of the product could be used.

Type of development license	Module contained	Functionality description
Development license	Core_Dev (kernal development module)	It provides the basic GIS features, such as data management, map browsing, and editing.
	Navigation_Dev (traditional navigation development module)	It provides path planning, navigation guidance features.
	Industry_Navigation_Dev (Industry navigation development module)	It provides some features, such as path planning, navigation guidance based on topology road network
	Indoor_Navigation_Dev (Indoor navigation development module)	It provides the features such as path planning and navigation based on indoor.
	Plot_Dev (2D plotting development module)	It provides the 2D plotting feature.
	Realspace_Dev (3D scene development module)	It provides some basis features on 3D scene.
	Realspace_Analyst_Dev (3D analysis development module)	It provides the 3D analysis feature.
	Realspace_Effect_Dev (3D effects development module)	It provides 3D effects festure.
	Plot3D_Dev (3D plotting development module)	It provides the 3D plotting feature.

Running license type	Functionality module contained	Functionality description
Running license	Core_Runtime (kernal runtime module)	It provides the basic GIS features, such as data management, map browsing, and editing.
	Navigation_Runtime (traditional navigation runtime module)	It provides path planning, navigation guidance features.
	Industry_Navigation_Runtime (Industry navigation runtime module)	It provides some features, such as path planning, navigation guidance based on topology road network
	Indoor_Navigation_Runtime (Indoor navigation runtime module)	It provides the features such as path planning and navigation based on indoor.
	Plot_Runtime (2D plotting runtime module)	It provides the 2D plotting feature.
	Realspace_Runtime (3D scene runtime module)	It provides some basis features on 3D scene.
	Realspace_Analyst_Runtime (3D analysis runtime module)	It provides the 3D analysis feature.
	Realspace_Effect_Runtime (3D effects runtime module)	It provides 3D effects festure.
	Plot3D_Runtime (3D plotting runtime module)	It provides the 3D plotting feature.

Full-function GIS

As the professional mobile GIS development platform, SuperMap iMobile 9D provides the function of map operation, data collection, draw and edit, spatial analysis, path navigation and so on. Applications based on this platform could provide multi-source map combination and thematic data browsing conveniently, realize the search and analysis of spatial information, collect, edit and manage the terminal data, display and monitor the dynamic data efficiently.

The all-new map display engine

Compared with PC-end map, mobile-end map focus on user's experience more: map display effects and map operation performance. To improve the experience, SuperMap iMobile 9D uses the all new OpenGL display tech to draw the map, which updates the display effects and performance. It assures the delicated effects by using OpenGL facets-surfaces rendering, text rendering and anti-out-of-sharp advantages. OpenGL overall rendering mode could improve the full range rendering performance, also makes map loading faster, displaying fluently by the GPU acceleration. Map transparency, rotate, angle of pitch could also be realized.

GL map tiles package

SuperMap iMobile 9D supports offline loading the data of GL map tiles package, greatly enhance the display performance of the map.

Rich data visualization effect

SuperMap iMobile 9D provides the support for abundant data visualization effects, and makes mobile terminal become a important terminal for displaying big data.

Integration of offline and online

SuperMap iMobile supports multiple online map services, as well as offline. It is important in the area of no mobile signal, limited network, confidential data and high performance mobile GIS application.

Navigation GIS integration

Maps and data of GIS application could be used in navigation directly, to realize the seamless joint of navigation and business functions. You could set the parameters of path statistic and navigation by business demanding to realize the customization.

Connect integration

SuperMap iMobile realizes the broadcast message transmission and point to point message transmission by the support of 3 international standard AMQP, MQTT and STOMP, as well as data dispatch, multi-end co-operation. Improves the geometry objects interaction application between mobile-end and server-end by support of GeoJson.

SuperMap iMobile 9D realizes that mobile end could communicate with the positioning box of high accuracy data positioning collection terminal box by bluetooth to get the sub-metre positioning data. It brings the convenience and accuracy of data collection to the mobile-end on positioning service. Position data collection and service application will be more wildly used.

Professional spatial statistic

SuperMap iMobile 9D could provide overall GIS analysis function, based on local and service data to perform overlay analysis, route net analysis, tube distribution analysis and buffer area analysis.

Efficient network analysis

SuperMap iMobile 9D supports the efficient network topology analysis, which could be used in GIS data route plan, tube distribution analysis, tube net patrol and so on.

Enhancement on data collection function

- GPS trajectory collection: normal mode, snap road mode, equal-distance interval mode, equal-time interval mode and intelligence record mode.

- Geometric object collection: SuperMap iMobile 9D supports the collection for point, line, region geometric object.

- Multi-media data collection: Besides the position information, SuperMap iMobile 9D provides the collection of image, audio and video information.

Displaying the dynamic object in real time

SuperMap iMobile 9D provides the power of dynamic rendering thematic map by the real time data in the terminal end to display the thematic information by the terminal business demanding and the change of data and take advantage of immediate effects of the mobile application. SuperMap iMobile 9D provides the high performance interaction display for the dynamic objects whose locale and status change fast. Terminal application could monitor the locale and status change of the target objects in real time on the map and display the changing process by the animation way. Dynamic objects support gesture interaction operation to provide the rich and direct experience. Realize the monitoring to the moving target, such as vehicle monitor and e-fence, and real time status monitoring such as device alert, running status and so on. SuperMap iMobile 9D provides integration display function for the huge amount data display to improve display effects and performance.

Situation plotting for dispatch command

SuperMap iMobile 9D supports situation plotting for dispatch command, provides multiple point symbol and arrow symbol plotting. By them, you could express dispatch message fast. Meanwhile, manually drawing the geometry object, scrawl functions could express more information.

High performance mobile 3D

3D scene is the core application function of SuperMap iMobile 9D. Users could build the 2D and 3D integration mobile GIS application system fast, browse and operate interactively the 3D maps and scenes in the mobile end. Provides the 3D display and search of terrain, image, model, vector, particle, water surface and so on.

3D oblique photograph

Oblique photograph is a new tech which could restore the real world by using multiple sensors from one drone to collect image vertically and from four directions. Compared with artificial model building, it has features below: reflect the real situation of surface features, high accuracy of the data, model building automatically, which could reduce cost and improve collection efficiency. It supports model loading system, browsing the OSGB oblique photography data online or offline and no need to transform the data. In the meantime, selecting the highlighted model, single body model properties information search are supported.

Simplified development

Providing the free development tool iMobile for ReactNative based on ReactNative, users can develop mobile GIS applications operating in Android or iOS through using javascript based on the tool.

Data security

SuperMap iMobile 9D focus the data security more, provides the workspace encryption, data source encryption, cache data encryption and so on.

- Workspace encryption: set code in workspace, you need input code when opening the workspace. not so secure.

- Data source encryption: encrypt the file by the secret key. High security. Even the data are lost, they could not be opened with other tools.

- Cache file encryption: Data source encryption: encrypt the file by the secret key. High security. Even the data are lost, they could not be opened with other tools.

SuperMap iMobile 8C product architecture

SuperMap iMobile 8C has more reasonable component divide. Core module is data. That reflects the geo-info system data concept: Data is the blood of GIS. Data module mainly focuses on the handling of spatial data. Other module depends on the data module, while relatively independent.

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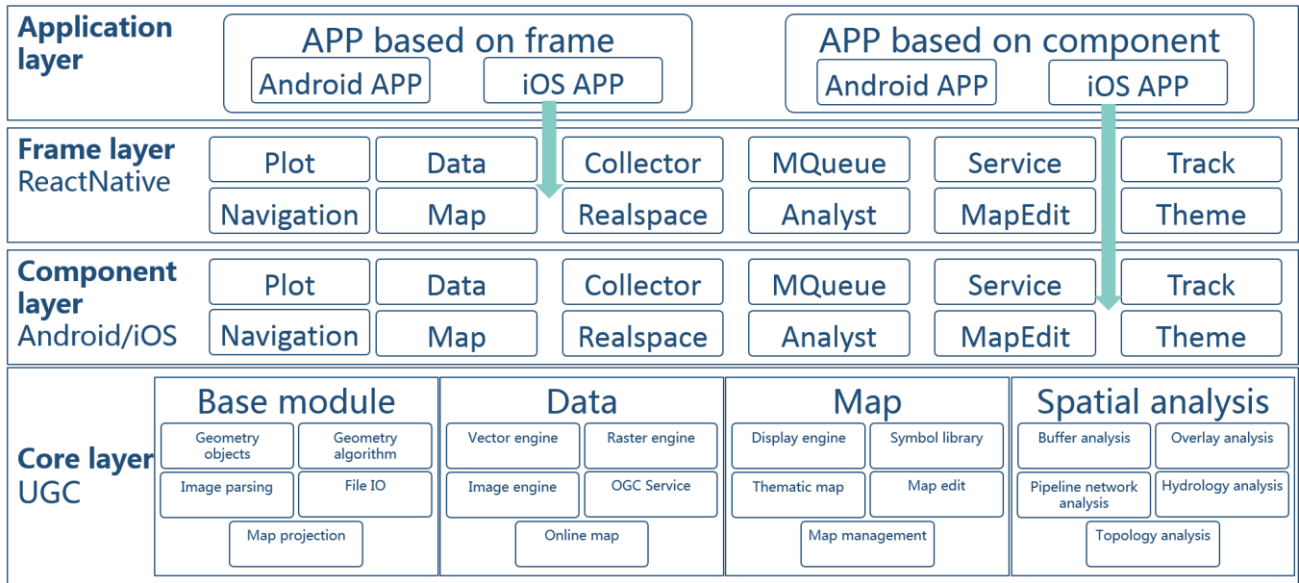
SuperMap iMobile 9D product architecture

Function module	Jar file matched	Functions essentials
Data module	com.supermap.data.jar	Core module. Spatial data is the core of geo-info system, which is called the blood of GIS. All the GIS functions need the participation of spatial data. As the core, it provides the overall operation and handling of the spatial data and their properties, including: creation, management, access and search. It also provides the geometry calculation between geometry objects.
Map module	com.supermap.mapping.jar	Map is the presentation and expression of the geo/spatial data and their spatial relationships. Mapping function is one of the basic functions of GIS. It provides the comprehensive map display, render and other functions. This module provides function of making a wide variety of thematic maps: single value map, range map, tag map and customization map… Provided functions of dynamic layer browsing and related customization in the map include adding and rendering dynamic object. Providing data visualization function, supporting heat map, aggregation map, point density map, relation map, grid heat map.
Analysis module	com.supermap.analyst.jar	Provides spatial analysis based on vector data, such as overlay analysis, buffer area analysis. provides the overall network analysis function, including traffic network

Function module	Jar file matched	Functions essentials
		analysis (address-selecting analysis, travelling vendor analysis, logistic and dispatch analysis, best route analysis, the nearest facility finding analysis and so on), facility network analysis (checking ring road, search the common up or downstream, finding the connected arcs, up or downstream route analysis, finding source and collection, up or downstream tracking and so on).
Multi-media data collection module	com.supermap.mdatacollector.jar	Provides the collection of image, audio and video.
Message bus module	com.supermap.messagequeue.jar	Provides the supports of 3 international standards: AMQP, MQTT and STOMP to realize the broadcast message transmission and point to point message transmission of the GIS data and multiple ends co-operation and data dispatch.
Navigation module	com.supermap.navigation.jar	Traditional navigation: it provides voice navigation and supports the diversity route analysis. E.g.: shortest time, shortest distance and the least fare route. All-new interface. Function of pause navigation, stop navigation and continue navigation. Interface is more simple for using easily. Industry navigation: supports self owned GIS data navigation, route plan with multi-mode, full traffic rules including avoided area, forbidden drive and so on. 2D&3D indoor navigation: Supporting indoor navigation point settings, cross-floor path analysis and navigation.
Situation plotting module	com.supermap.plot.jar	Provides multiple point symbols and arrow symbols plotting; supports the strip style and filling style configuration of plotting symbols.
3D module	com.supermap.realspace.jar	Provides the 3D display and search of the terrain, image, model, vector, and particle and water effects on the mobile device. Supports the 3D scene service published by SuperMap iServer. Supports browsing the OSGB

Function module	Jar file matched	Functions essentials
		oblique photography data online or offline directly and no need to transfer data format. Supports selecting the highlighted model, single model properties information search and so on.
Service module	com.supermap.services.jar	Provides access to the SuperMap GIS server and the access power to the public service via extension.
Track record module	com.supermap.track.jar	Provides the professional track record function and get the coord of the mobile device automatically

Convenient online map access

SuperMap iMobile 9D could access the SuperMap server products, map services published by SuperMap cloud services, data services and function services, combine online and offline functions, and extend the data source and function range of the mobile terminal. SuperMap iMobile 9D provides the fast customization to realize the data interaction, sync and update among the mobile ends, server ends and other ends. It supports the public map services such as OGC service, tianditu service, google map etc.

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MapWorld

SuperMap Cloud Service
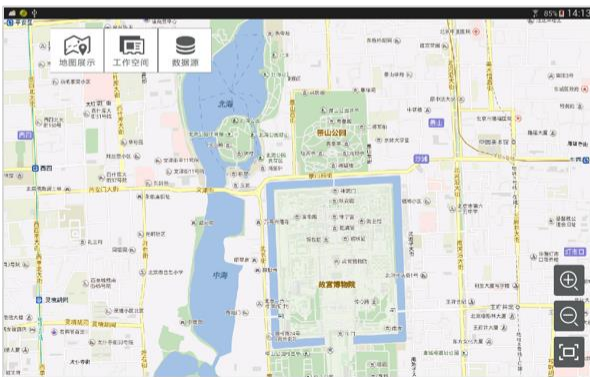
Baidu Map
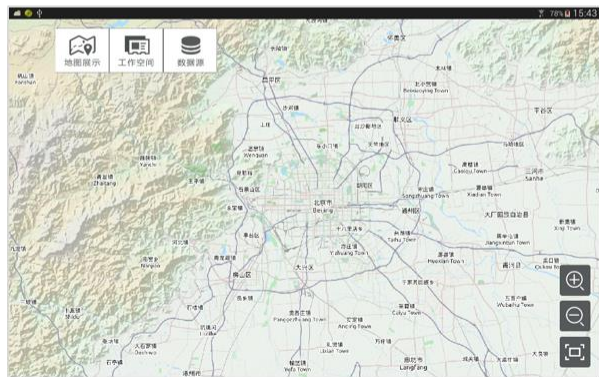
OpenStreetMap

Powerful offline map display

SuperMap iMobile 9D could visit the online data as well as local data of mobile device to build the mobile GIS applications without limitation of signal and bandwidth, reduce the network dependencies and save the network flow to bring the stable and fluent experience. You could choose the vector data, image or tile cache by the application scene and data situation when using the local map data. Local vectors, CAD data could be edited, searched and analysed offline. Image and tile could be used as base map to be overlayed or used combinedly with the vector data and service data.

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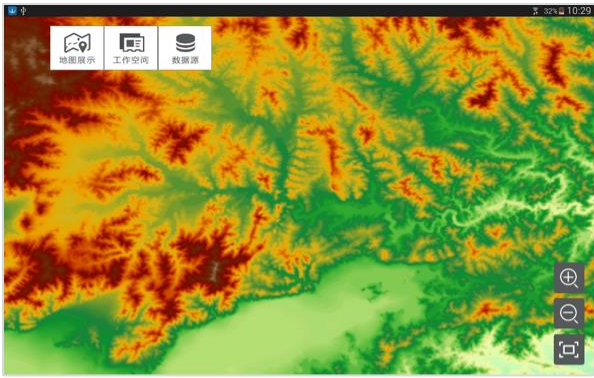
DEM

SIT

AutoCAD

TIFF

GL map tiles package

SuperMap iMobile 9D supports offline loading the data of GL map tiles package.

Rich data visualization effect

SuperMap iMobile 9D provides the support for abundant data visualization effects, and makes mobile terminal become a important terminal for displaying big data.
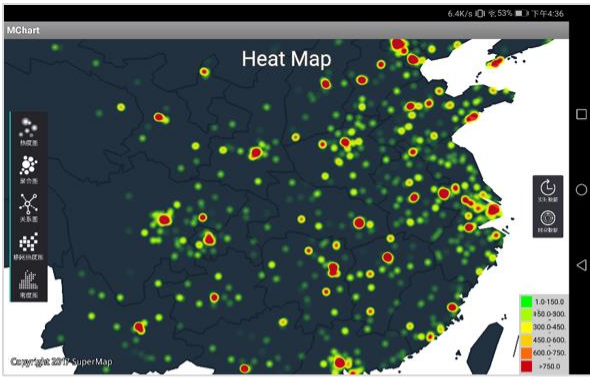
Heat Map

Aggregation Map
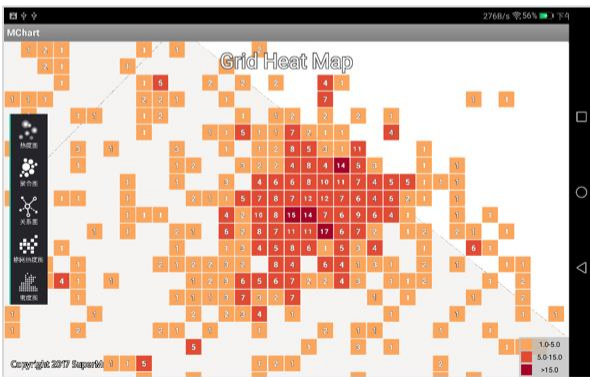
Grid Heat Map
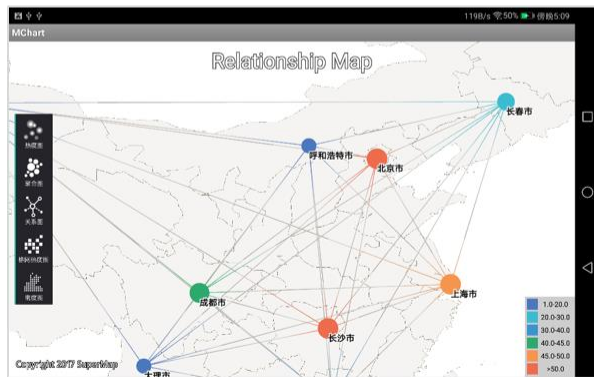
Relationship Map

Dynamic object displaying in the real time

SuperMap iMobile 9D provides the ability to render the thematic map by the real time data on the terminal end dynamically to display the thematic information by the demanding of terminal application and the change of data to take advantage of the immediate effects of the mobile application.

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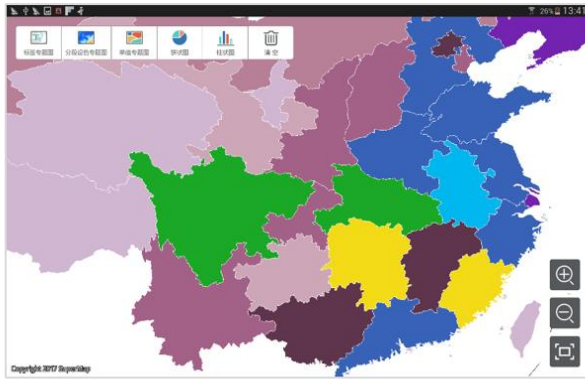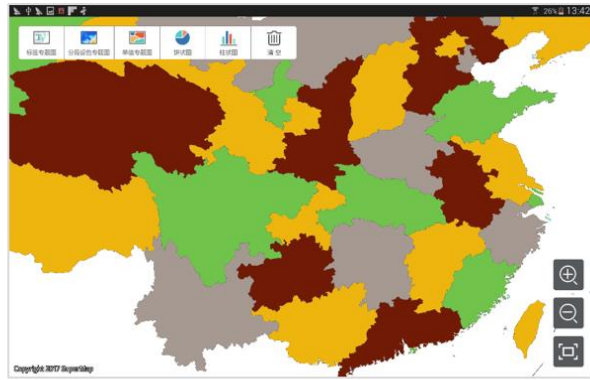
Range Thematic Map

Unique Value Thematic Map

Lable Thematic Map
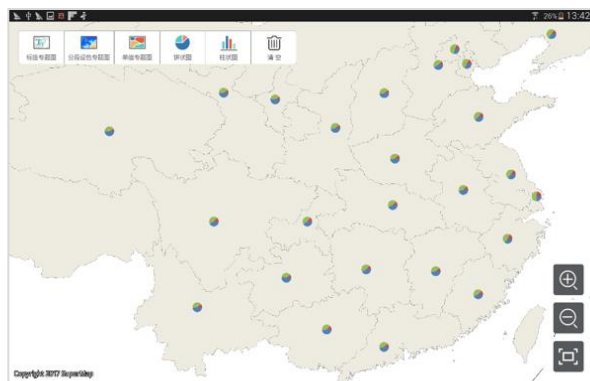
Graph Thematic Map

Terminal application could monitor the target object's locale change, status change on the map in real time and display the process by animation way. Dynamic object supports gesture interaction operation to provide the rich and direct interaction experience. Monitor the moving target such as vehicle, e-fence by the dynamic object display, as well as the device alert and running status.
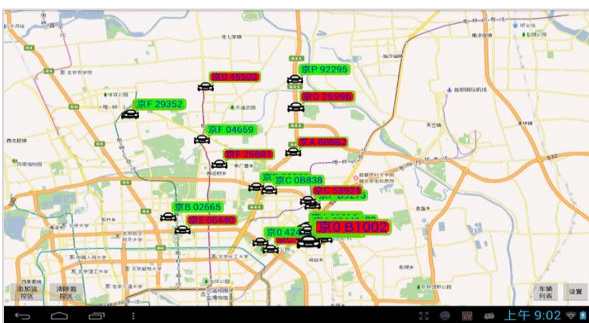
Professional spatial analysis

SuperMap iMobile 9D provides the overall GIS analysis function. It could perform the buffer area analysis, overlay analysis and route net/tube analysis based on the local and service data, as well as information dig and the handling to the data in the real time.
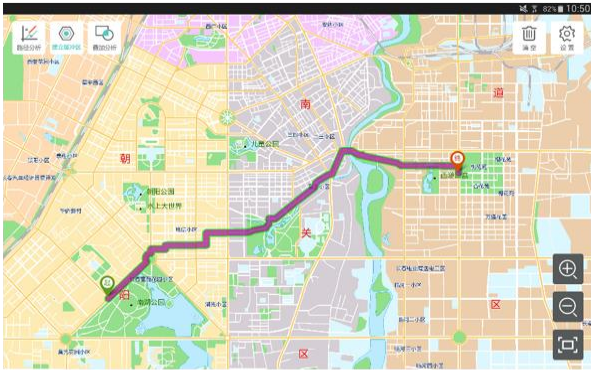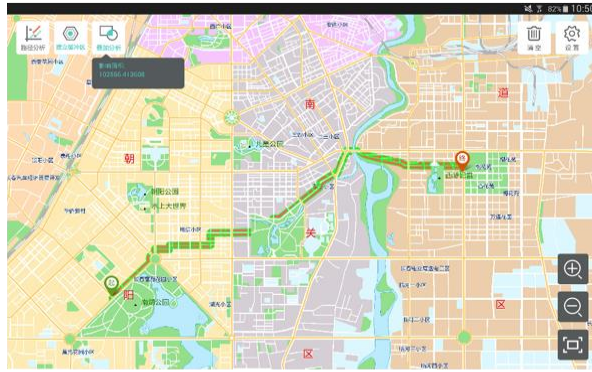
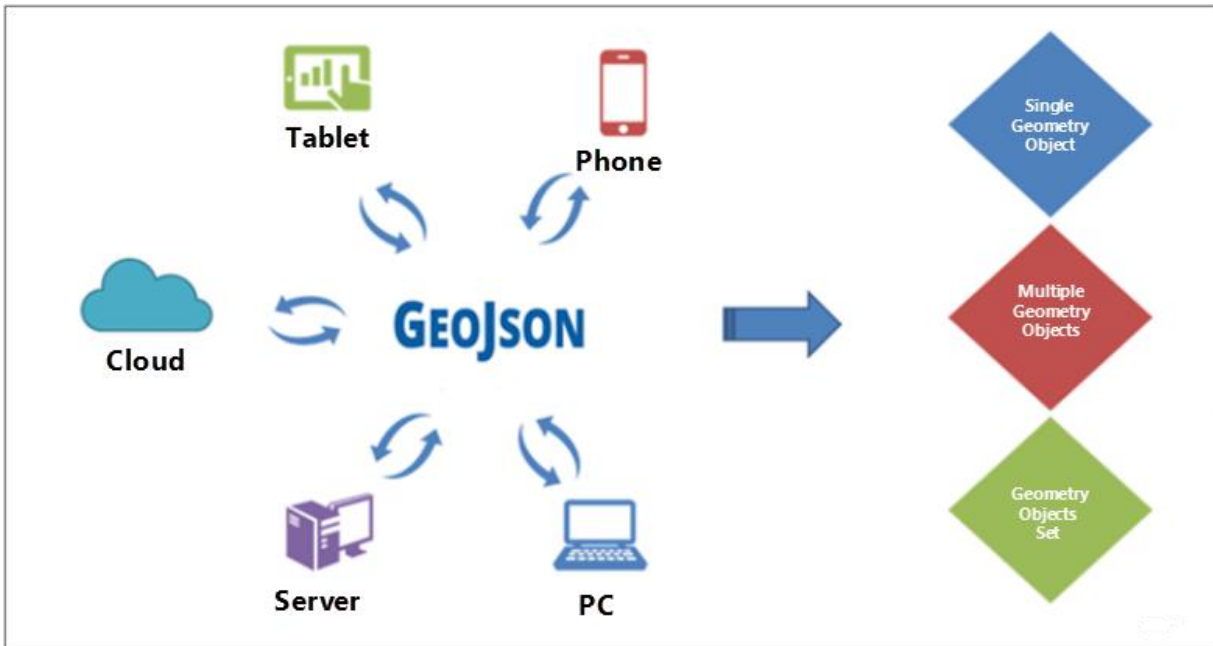Buffer Area Analysis   Overlay Analysis

Information bus system used in co-operation data collection

Message bus tech is the neural center of the multi-end and co-operation. It could realize the multi-location monitoring, sensor data joining up, data transmission between ends and even the operation command. As the more and more important data type in the information system, it requires that GIS data could be turnover or transmit by messages bus, no matter in task dispatch, co-operation or business intelligence. SuperMap iMobile 9D realize the transmission of GIS data by broadcast or point to point and the multi-end co-operation and data dispatch via the supporting of 3 international standard: AMQP, MQTT and STOMP. By the supporting of messages bus, when performing the location monitoring application, mobile end could monitor batches of sites and without the limit of time and space. Collect data by multiple mobile devices to reduce the repeated operation and improve the efficiency. It realizes the command dispatch functions at the mobile end more flexible and solving the indoor blind commanding issue.

Send Data   **Receive Data**   **Synchronize**
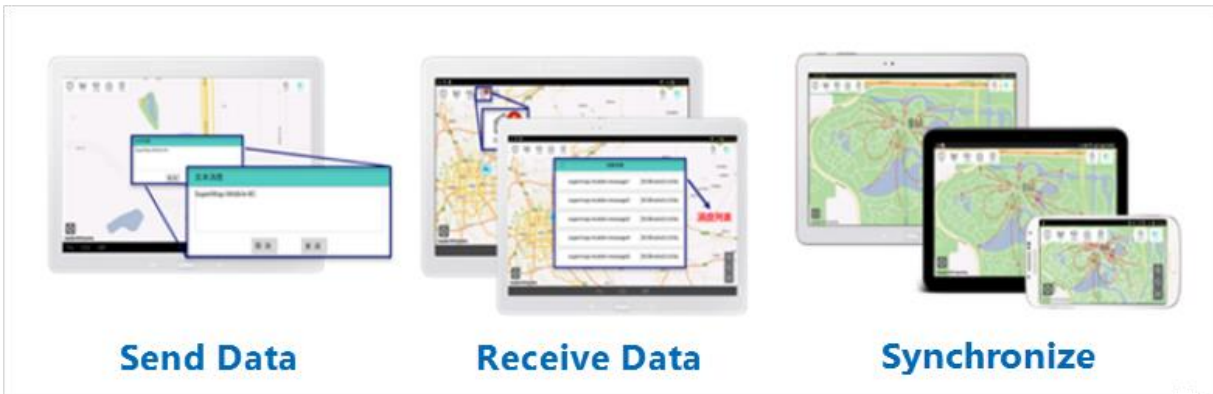
GeoJson transmission format standard

SuperMap iMobile 9D supports the efficient network topology and could be used widely in GIS data route planning, tube network analysis, tube network patrol and so on. Import or export of single point, single line, single surface, multi-point, multi-line, multi-surface and geometry object collection is supported.

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High accuracy location (sub-metre)

SuperMap iMobile 9D realizes that mobile end could communicate with the positioning box of high accuracy data positioning collection terminal box by bluetooth to get the sub-metre positioning data. It brings the convenience and accuracy of data collection to the mobile-end on positioning service. Position data collection and service application will be more wildly used.
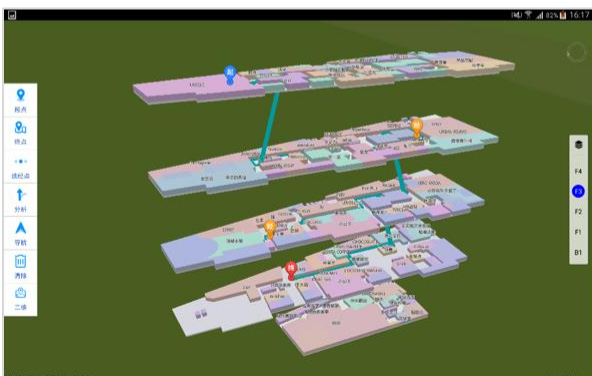
Indoor navigation

SuperMap iMobile 9D provides the indoor navigation function. Supports to switch display between 2D and 3D indoor map. Supporting indoor navigation point settings, cross-floor path analysis and navigation.
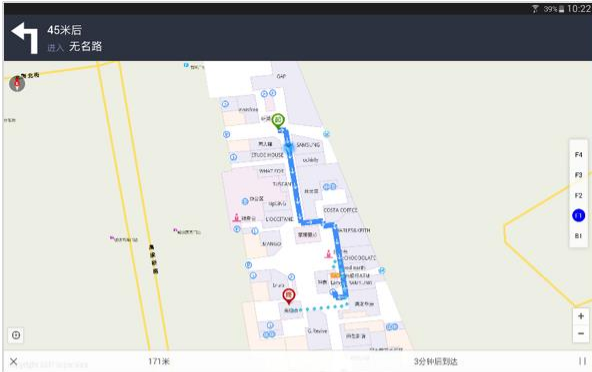
2D Indoor Navigation

3D Indoor Map


3D Cross Floor Path Analysis
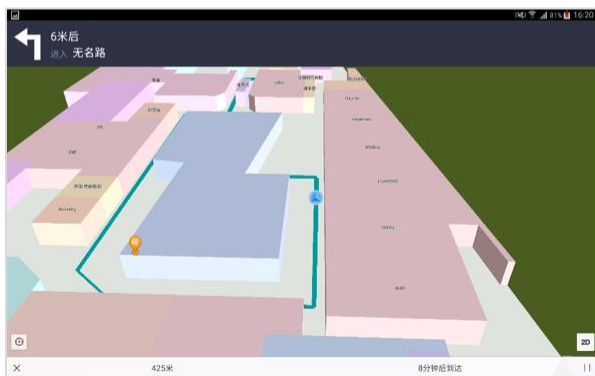
3D Indoor Navigation

GPS data collection

SuperMap iMobile 9D GPS provides trajectory collection and geometric object collection functions for data collection.

There are 5 modes for trajectory collection: normal mode, snap road mode, equal-distance interval mode, equal-time interval mode and intelligence record mode.

- normal mode: this mode record every positioning information accurately;

- snap road mode: this mode could help us to correct the GPS information of the deviation road to the road automatically;

- equal-distance interval mode: this mode will collect information by the equal distance interval based on parameter we set;

- equal-time interval mode: this mode will collect information by the equal time interval based on parameter we set;
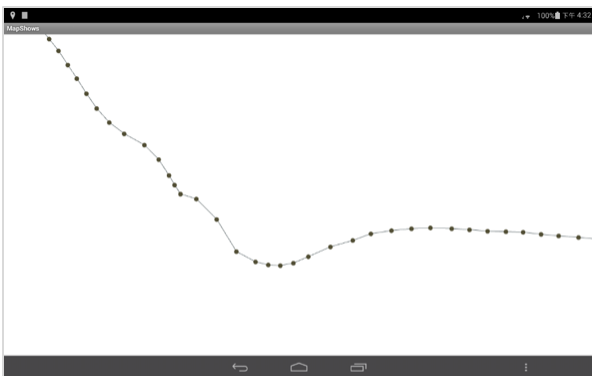
- intelligence record mode: this mode will collect less in the plain road, while more in the turning to make the route drawing more accurate.
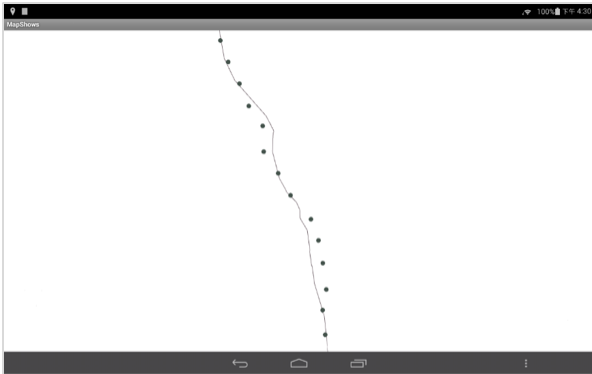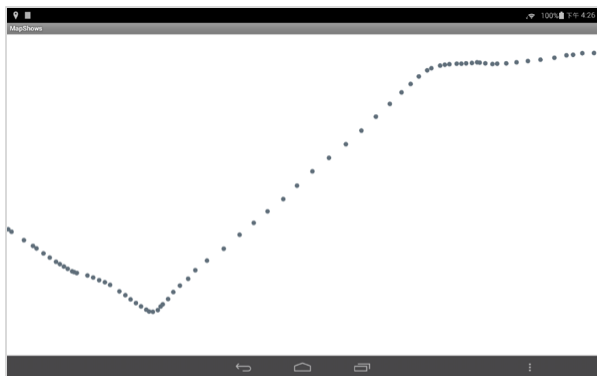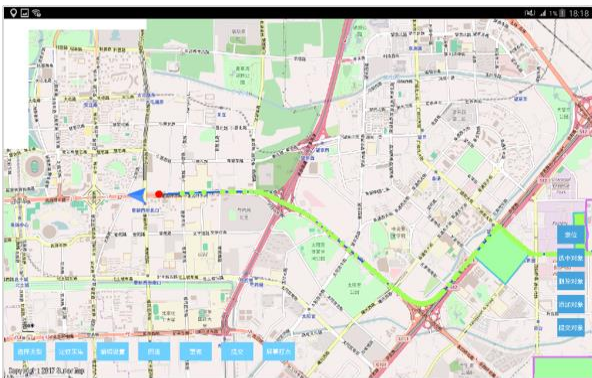

Distance Interval Mode
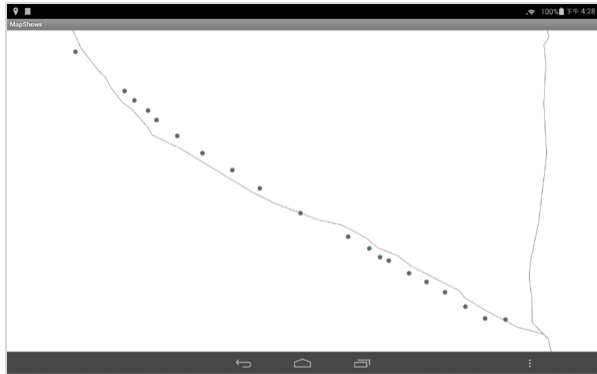
Time Interval Mode

Positioning Road Mode

Smart Mode

Geometric object acquisition support point, line, surface object collection.

GPS Collection Line Objects

GPS Collection Region Objects

Multi-media data collection

Besides the position information, SuperMap iMobile 9D provides the collection of image, audio and video information.

Add: 6/F, Building 107, No. A10, Jiuxianqiao North Road, Chaoyang District, Beijing, 100015, CHINA, 100015
E-mail: request@supermap.com   Website: www.supermap.com

Picture Collection

Video Collection

Audio Collection

Situation plotting for dispatch command

SuperMap iMobile 9D supports situation plotting for dispatch command, provides multiple point symbol and arrow symbol plotting. By them, you could express dispatch message fast. Meanwhile, manually drawing the geometry object, scrawl functions could express more information.
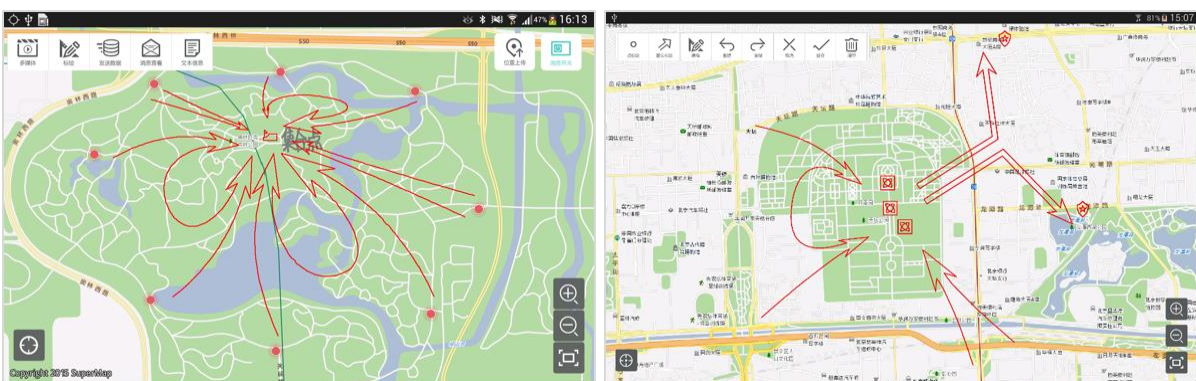
iMobile for ReactNative development framework

Providing the free development tool iMobile for ReactNative based on ReactNative, users can develop mobile GIS applications operating in Android or iOS through using javascript based on the tool.

Data security

SuperMap iMobile 9D focus the data security more, provides the workspace encryption, data source encryption, cache data encryption and so on.

- Workspace encryption: set code in workspace, you need input code when opening the workspace. not so secure.

- Data source encryption: encrypt the file by the secret key. High security. Even the data are lost, they could not be opened with other tools.

- Cache file encryption: Data source encryption: encrypt the file by the secret key. High security. Even the data are lost, they could not be opened with other tools.