SuperPad® 3.3



SuperPad 3.3 Help

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Chapter



1 SuperPad 3.3 Help



SuperPad 3.3 Help

SuperPad 3.3 is a full-function mobile GIS application. SuperPad contains the powerful and complete GIS functions as well as a superior C/P ratio to help field-based personnel to collect, edit, display and measure spatial data at a reasonable budget. The highly flexible development environment and diversified extensions enable you to create an ideal platform and solve more demands during field tasks. Moreover, SuperPad allows synchronizing the data with enterprise server to improve your work efficiency.



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Chapter



2 Copyright Information



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Chapter



3 New Generation of SuperPad

3.1 What's New in SuperPad 3.3



What's New in SuperPad 3.3

Different from SuperPad 2, SuperPad 3.3 is developed by the brand new operation core, SuperGIS Mobile Engine 3. As a result, all the functions SuperGIS Mobile Engine 3 has are able to be designed in SuperPad 3.3. SuperPad 3.3 is more powerful, more rapid and more user-friendly in manipulation than SuperPad 2. Besides SuperPad 3.3 also offers developers to develop plug-in extensions, such as self-defined layer format, GPS Protocol, toolbar, buttons, etc., which will satisfy users' more needs and improve the working efficiency.

The new generation of SuperPad 3.3 is designed with more flexible applications and could be used in more different fields, which is the first choice of Mobile GIS Software. Besides, user can use SuperGIS Mobile Engine to customize the most suitable mobile GIS solution according to the needs.

Here we have listed the features of SuperPad 3.3:

- With the brand new .NET Compact Framework as its core component, it could run on devices that support .NET CF (WinCE / Smart Phone / Desktop, such as PDA or Smart cell phone) .
- 2. The brand new interface is more user-friendly; the function is more concentrated and practical, and the process performance is higher and more rapidly.
- 3. The symbols are compatible and exchangeable between SuperPad 3.3 and SuperGIS Desktop 3.1 to improve the use of data.
- 4. The new design of toolbar groups allows users to flexibly change toolbar based on the property to rapidly manipulate on the limited PDA screen; moreover, the less space toolbars occupy, the more space map could display. Such design will help users to read and manipulate map more easily and conveniently.
- The new function of <u>Screen Lock</u> could reduce the chance of unintended modifying map by touching screen in motion.
- 6. The dialog box is able to maximize for data reading clearly.
- 7. The transparency settings of layer display could enhance the overall looks and coordination of map.
- 8. The brand new <u>Smart Editing Bar</u> allows users to undo and redo the editing actions; besides, all the editing actions to a single feature confirmed can be stored and redrew at a time, which could improve the overall efficiency and speed.

- 9. Combined with image and GPS information, the brand new photo layer management could rapidly create photo layer then directly open the connected photo at its map position through <u>Hyperlink</u> function, just like you are in the real environment.
- 10. The brand new <u>Slide Zoom</u> function allows you to do fixed zoom out and fixed zoom in by drawing upwards and downwards with your finger for the quick browse. Or you could also use this function together with another new function of <u>Panning Frame</u> to do panning and zooming together without switching functions but finish your request more quickly.
- 11. Rotate Map function allows users to rotate map and fix your heading aspect as the PDA's upward aspect so that as users are heading with PDA, they do not need to rotate PDA to adjust the map aspect to fit the real heading aspect. And to cancel this function and recover map aspect, it takes only one click on Clear Rotation button to make it. Quickly and precisely, PDA upward aspect will be locked north aspect.
- 12.As GPS turns on, it shows the GPS status bar on the screen along, the revealing information includes longitude, latitude, altitude, heading speed, data and time.
- 13. <u>Tracklog Record</u> function has great upgrade with more options that users could choose to save the tracklog file in type of KML, GEO or SHP file, and assign the format as point, line or polygon.
- 14. Users could develop plug-in extensions with SuperGIS Mobile Engine and customize the needed functions. For instance, the function of **Sketch** could sketch and mark the map on mobile devices.
- 15. SuperGIS Layer Files (*.slr) of SuperPad 3.3, SuperPad 2, SuperGIS 2 and SuperGIS 3.1 are able to be used among these software freely, expanding the use of file.
- 16. The map files of SuperPad 3.3 (*.spp) and SuperWebGIS (*.swg) are able to be used in each other, while the map file of SuperPad 2 (*.spm) still could be opened and browsed in SuperPad 3.3.
- 17. Quick Explorer is added on the right side of the map, allowing users to use Pan, Zoom In, Zoom Out or Zoom To Full Extent function, and users do not need to switch the main toolbar to choose the function.

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3.2 I can Use SuperPad to...



I Can Use SuperPad to...

All the new or enhanced functions described above are taking SuperPad 2 as the foundation to further enhance and improve in user-friendliness, flexibility and functionality. SuperPad can be a good assistant to do the field surveys, and its mobility feature makes it easily portable and flexibly used, which will help you complete the tasks more efficiently.

The Mobile GIS, SuperPad 3.3, will assist you to do many tasks as below:

View the Existing Layers

SuperPad 3.3 supports various types of layers, such as vector and raster layers.

Supported Feature Layer: Supergeo GEO (*.geo), ESRI Shapefile (*.shp), DXF (AutoCAD,*.cad).

Supported Raster Layer: MrSID (*.sid), ECW (*.ecw), JPG(*.jpg), SGR(SuperGIS Raster, *.sgr), GeoTiff (*.tiff), JPEG 2000(*.jpeg).

Browse the Map

Various methods provided by SuperPad 3.3 facilitate you to view the files freely. You could set up labels to mark some specific attributes or set up the waypoints to navigate with GPS. Or you could use **Zoom In**, **Zoom Out** or **Pan** tool to further view the area desired to understand. Also it offers **Rotate Map** tool to rotate map.

View the Attribute Data of Files

Through the <u>Identify</u> tool, you only need to tap on the feature, and then the related attribute data will reveal; or it will open the related exterior information or file on the screen immediately by the function of <u>Hyperlink</u> to promptly offer related message for you. Thus, you do not need to search information. As you are editing features, you can zoom in the editing feature to the map center for easier viewing and help you precisely edit.

Measure Distance and Area

With the tools of <u>Polyline Measurement</u>, <u>Freehand Measurement</u>, <u>Rectangle Measurement</u>, <u>Radial Measurement</u> and <u>Feature Measurement</u> you could measure the distance and area.

Connection of SuperPad and GPS

As SuperPad and GPS are connected, you could use GPS to help navigation and orientation based on the existing layers. Even you could edit the features through GPS. And the GPS <u>Tracklog Record</u> function provides many diversified applications. For example, you might convert the tracklog file to GIS file and display on SuperPad or other related GIS software.

Edit the Layers

Through SuperPad 3.3, you could not only view or search your layers but also you could edit the layers. To Point layer, Line layer or Polygon layer you could use stylus,

New Generation of SuperPad

mouse or even by capturing GPS position to create or edit features, and you could also edit the spatial reference and attribute. As a result, all the properties of the features are totally under your control.

Camera Function

SuperPad 3.3 supports PDA's <u>Camera</u> function. As GPS is open to take a picture, SuperPad 3.3 could record the coordinates of the position, date and time for you to manage pictures. Moreover, these pictures with coordinates are able to be used to create photo layers. The combination of pictures and GIS system will give better image concept of the real environment to users.

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3.3 Contact Supergeo



Contact Supergeo

If you would like to obtain the technical supports or receive related educational training, you might find the contact information from the Product License Agreement or please directly contact your sales representative for further help.

You are also welcome to visit our website at: http://www.supergeotek.com/for technical supports and GIS related news.

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Chapter



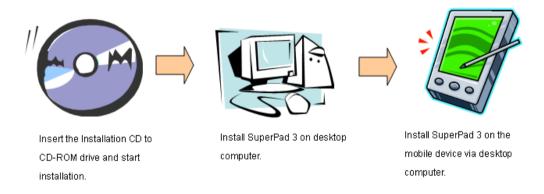
4 Installing SuperPad

4.1 Installing on Desktop Computer



Installing on Desktop Computer

SuperPad has to be installed in a different way. Firstly you need to install SuperPad on your desktop computer with the installation disk. After the installation is finished, install SuperPad on the mobile device through the installation program provided by the desktop computer which already installed SuperPad. So at the second step, you need to connect the mobile device (like PDA) and computer via synchronization software and follow the directions to install SuperPad on the mobile device step by step through the installation program provided by desktop computer. After the installation is finished, you can start SuperPad with the mobile device.



Since SuperPad 3.3 adopts .NET Compact Framework (abbreviated .NET CF) as its core architecture, before installation, please make sure your desktop computer already installed .NET Framework. Then you can start to install SuperPad. If system detects .NET Framework is not installed when SuperPad is being installed, please install the program which is provided in the installation disk first(Install .NET Framework on Desktop Computer). If .NET Framework is being installed in your computer, please skip to Install SuperPad on Desktop Computer and install

SuperPad.

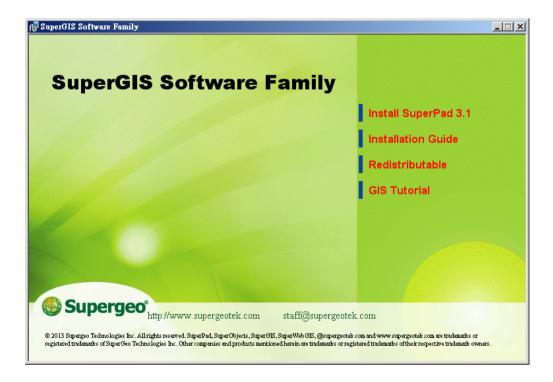
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Installing .NET Framework in Desktop Computer



Install .NET Framework on Desktop Computer

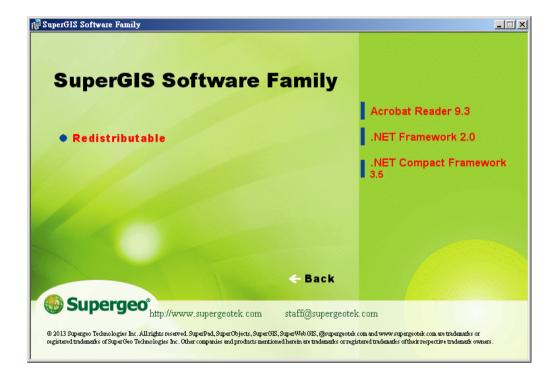
 Insert the installation CD to the CD-ROM drive of your computer, and the SuperPad Installation screen will pop-up automatically. Select the third item, "Redistributable."



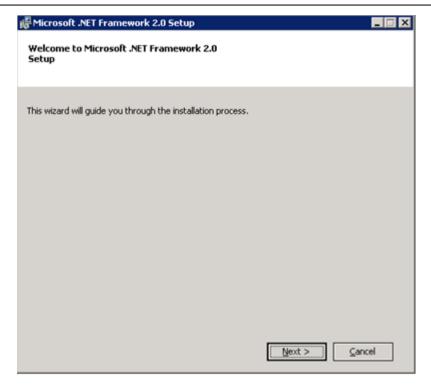
NOTE: if the installation screen does not show up automatically on the screen, please click Start 'Computer, and right-click the CD-ROM drive under Computer directory. A pop-up menu shows up. Please click Open on the menu and then click Autorun.exe to

show the installation screen of the figure above. Now you can follow the steps below and start to install.

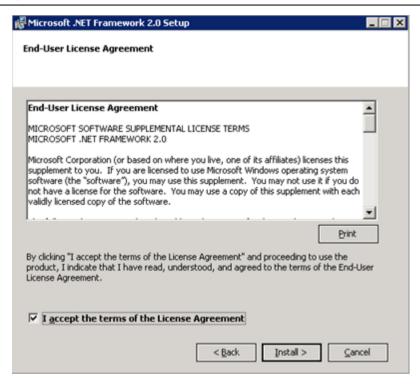
2. After you enter the window of the figure below, select the second item, ".NET Framework 2.0" to start to install.



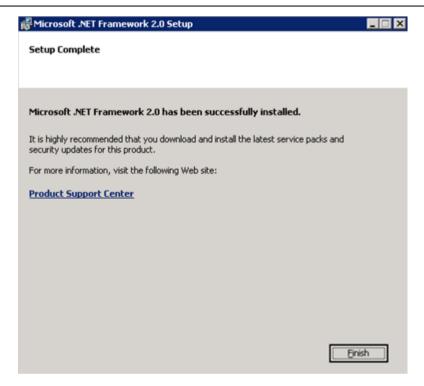
3. .NET Framework 2.0 setup program appears and click Next.



4. Check "I accept the terms of the License Agreement" and click **Install**, and the installation starts.



5. When the window of figure below shows up, it means .NET Framework 2.0 is successfully installed. In the next, please click **Finish**.



6. After .NET Framework 2.0 is installed, please follow the descriptions below to install SuperPad.

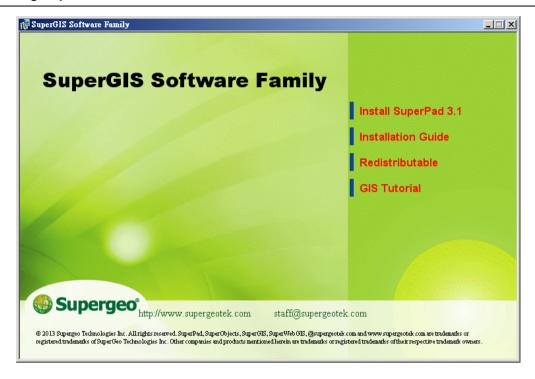
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Installing SuperPad on Desktop Computer



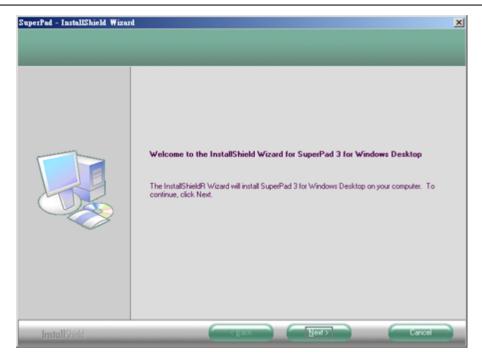
Install SuperPad on Desktop Computer

 Insert the installation CD to the CD-ROM drive of your computer, and the SuperPad Installation screen will pop-up automatically. Click "Install SuperPad 3.3", and the installation starts.

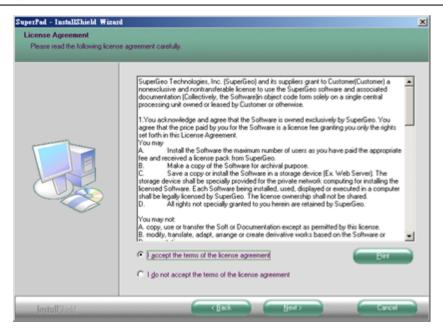


NOTE: if the installation screen does not show up automatically on the screen, please click Start 'Computer, and right-click the CD-ROM drive under Computer directory. A pop-up menu shows up. Please click Open on the menu and then click Autorun.exe to show the installation screen of the figure above. Now you can follow the steps below and start to install.

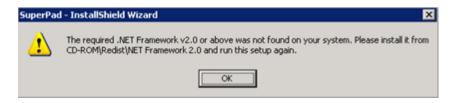
2. Click Next to start installation.



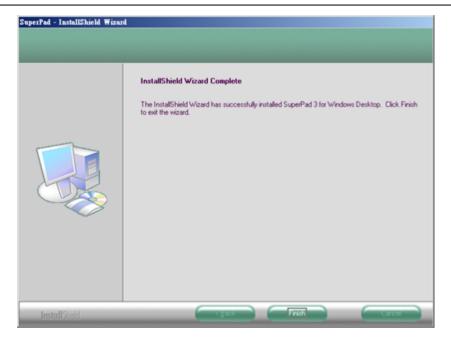
3. Click "I accept the terms of the license agreement" and click **Next**. The installation of SuperPad starts.



4. If your computer does not install .NET Framework, the message as the figure below will appear to notify to install .NET Framework first. Please click **OK**. And install . NET Framework according to the steps of <u>Install .NET Framework on Desktop</u> <u>Computer</u>.



5. When the window of the figure below shows up, it means the installation of SuperPad is finished. Click **Finish** to accomplish installation.



6. After the installation is accomplished, you could open SuperPad.

If the license is not obtained yet, you will have ten minutes to use SuperPad. As to the way to obtain the license, please refer to **Obtaining a License**.

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4.2 Installing on Mobile Device



Installing on Mobile Device

To install SuperPad on mobile device you should install SuperPad on desktop computer first and connect the desktop computer which already installed SuperPad to mobile device via synchronization software, and then you can install SuperPad on the mobile device. So, before installing SuperPad on the mobile device please install on desktop computer first, and then you can install SuperPad on the mobile device through the synchronization software.

Installing SuperPad

Synchronization software is used to communicate between desktop computer and mobile device, if your operating system is Windows 2000/2003/XP please install ActiveSync 4.0 or higher as the synchronization software; if your operating system is Windows Vista or higher, please install Mobile Center 6.0 or 6.1. Both the two synchronization software mentioned above are free to download from the web site. Before you start to install please turn on the Mobile device (for example, PDA) and connect PDA with desktop computer via synchronization software.

Since SuperPad uses .NET Compact Framework (.NET CF) as the development core, you should install .NET CF on the mobile device first. Thus, SuperPad is able to be installed and activated. To help you install SuperPad conveniently, SuperPad provides the Setup of .NET Compact Framework 3.5 in the installation disk. If your mobile device does not install .NET Compact Framework, you can connect your PDA to the desktop computer through synchronization software and then install .NET Compact Framework on PDA from installation disk(Install .NET Compact Framework). If you already install .NET Compact Framework, please directly install SuperPad(Install SuperPad).

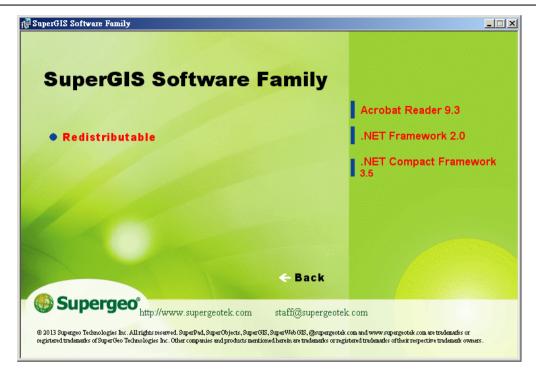
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Installing .NET Compact Framework



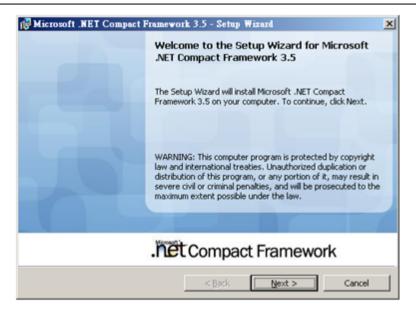
Installing .NET Compact Framework

Connect your PDA to the desktop computer; insert the installation disk to the CD-ROM drive. When the installation screen appears select the fourth item, "Redistributable", in the right part and then select ".NET Compact Framework 3.5."



NOTE: if the installation screen does not show up automatically on the screen, please click Start' Computer, and right-click the CD-ROM drive under Computer directory. A pop-up menu shows up. Please click Open on the menu and then click Autorun.exe to show the installation screen of the figure above. Now you can follow the steps below and start to install.

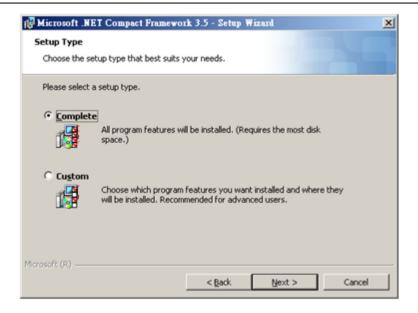
2. After the window of the figure below shows up you can start to install .NET Compact Framework 3.5. Please click **Next**.



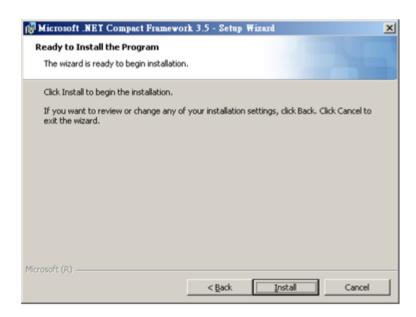
3. Click "I accept the terms in the license agreement" and click Next.



4. Select Complete and click Next.



5. Click Install to start to install .NET CF 3.5.



6. When the window of the figure below shows up, it means the system will start to install .NET Compact Framework 3.5 on the mobile device. At the time, **please do**

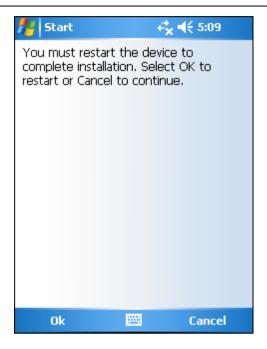
not click OK and check the PDA.



7. Select where you want to install .NET CF 3.5, Device or Storage Card of your PDA.



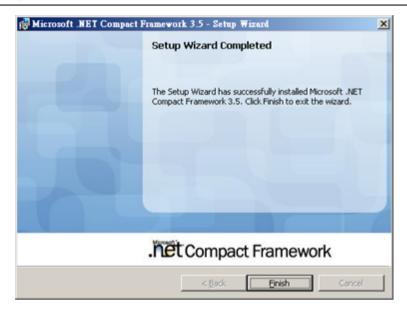
8. You should restart the PDA to finish the installation. Please click **OK** to restart PDA. After PDA restarts, please follow the directions and continue to install.



9. Please go back your desktop computer and see the screen, and click **OK**.



10. When the window of the figure below shows up, it means .NET CF 3.5 is successfully installed. Click **Finish** to accomplish setup.



11..NET CF 3.5 is successfully installed.

NOTE: If you wish to have better performance, higher version of .NET Compact Framework is recommended.

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Installing SuperPad

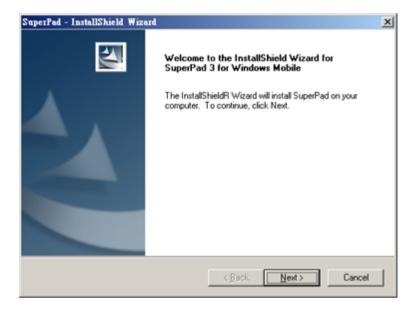


Installing SuperPad

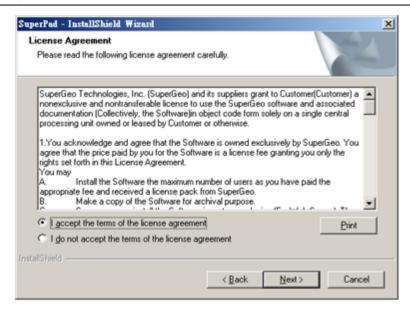
 Click Start > Program Files > SuperGeo > SuperPad 3 > Install SuperPad 3 for Windows Mobile.



2. Click Next.



3. Click "I accept the terms of the license agreement" and click **Next**. The installation starts.



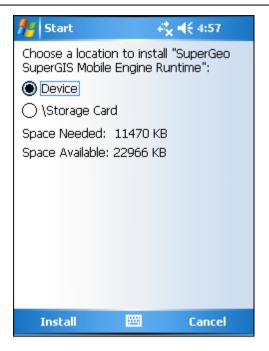
4. When the window of the figure below shows up, it means SuperGIS Mobile Engine Runtime application program is installed and downloaded to the desktop computer successfully and the installation on PDA will start. At the time please do not click OK to prevent the incomplete installation and check the screen of the mobile device.



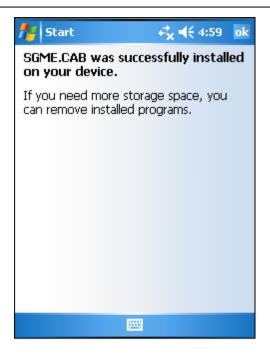
5. SuperPad is developed with SuperGIS Mobile Engine as the core. So, before SuperPad is installed, the system will install SuperGIS Mobile Engine Runtime first.



6. Choose to install SuperGIS Mobile Engine Runtime on Device or Storage Card of PDA. After selection please tap **Install** to start to install SuperGIS Mobile Engine Runtime.



7. When the message of the figure below shows up on the PDA screen, it means SuperGIS Mobile Engine Runtime is installed successfully. Please tap **OK** at the upper right corner.



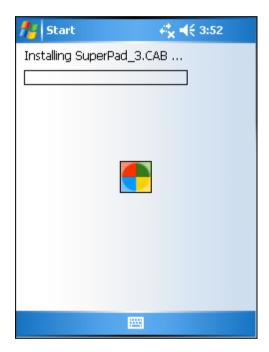
8. Go back to the computer screen, please ensure SuperGIS Mobile Engine Runtime is installed on PDA successfully and the screen of the previous step already showed up. Then you could click **OK**. After you click **OK**, system starts to download SuperPad on PDA.



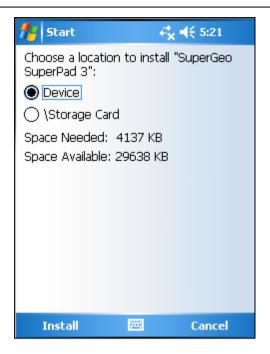
9. After the downloading is finished, the screen will show the window of the figure below again. At the time please do not click OK to prevent the incomplete installation and check the screen of the mobile device.



10. The system of PDA is ready to install SuperPad 3.



11. Choose to install on Device or Storage Card. After selection, please tap Install.



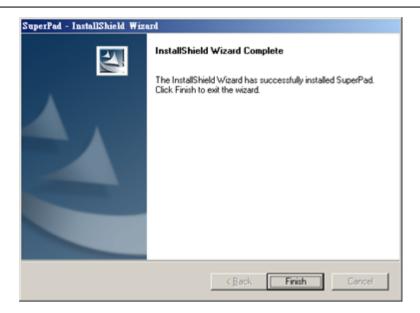
12. When the window of the figure below shows up on the PDA screen, it means SuperPad 3 is successfully installed on the PDA. Please tap **OK** at the upper right corner.



13.Go back to the computer screen, please ensure SuperPad is installed on the PDA successfully and the window of the previous step already showed up so you could tap **OK**.



14. Please click **Finish** to complete the SuperPad installation of PDA side.



15. Now you will see the icon of SuperPad 3 on Program Files. If the license is not obtained yet, you will have ten minutes to use SuperPad. As to the way to obtain the license, please refer to Obtaining a License.



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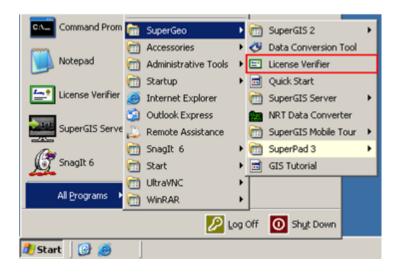
4.3 Obtaining a License



Obtaining a License

To activate all Supergeo series products, you need to acquire the license after setup. Please find the serial number on the Product License Agreement attached to Product Box. Before you start to obtain the license, please read the notes carefully:

- 1. Please connect your PC to the Internet. License Verifier will retrieve the valid license through the Internet.
- For SuperPad, you will have two sets of serial number. One is for desktop version (SuperPad for Windows Desktop), and the other is for mobile device (SuperPad for Windows Mobile).
- It is necessary to connect your mobile device to the desktop before getting the valid license for SuperPad CE version.
 - 1. Go to Start > All Programs > SuperGeo > License Verifier.



2. Click the product desired to obtain a license and select "Single License." For "Single License", you only need to connect to the Internet while it is the first time to obtain a license. Because SuperPad is not available in Floating version, please do not choose Floating License.



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How to Obtain a Single License?

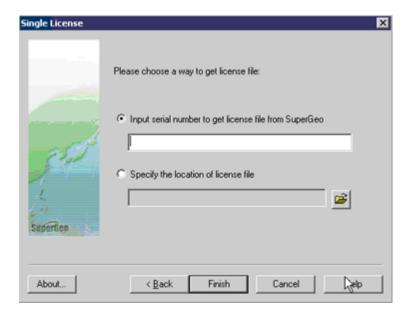


How to Obtain a Single License?

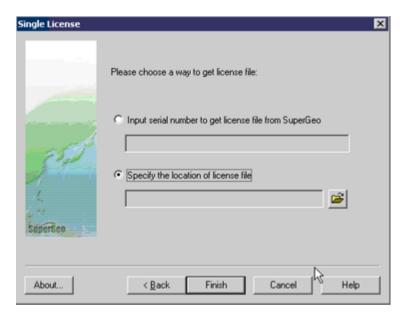
1. Select the title of the software you want to obtain a license for, choose "Single License" and click **Next**.



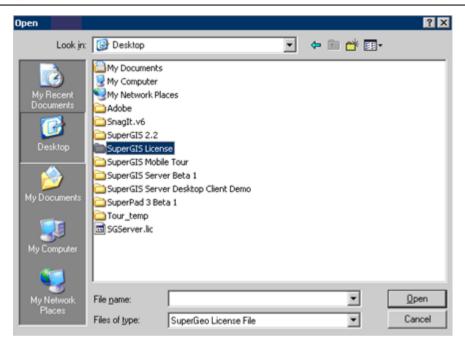
2. Select "Input serial number to get license file from SuperGeo" and enter the serial number to the text box. Serial number could be found on the Product License Agreement attached to Installation CD.



3. If you have activated the software, you could also select the existing license file (*. lic). Click "Specify the location of license file (*.lic)" and click the folder icon.



4. When "Open" dialog opens, select the license file and click **Open**. After the serial number is input or license file is selected, please click **Finish**.



5. After the license is successfully obtained, the message as the figure below shows up.



NOTE: if you want to get license for CE version, please connect mobile device and computer first. Then follow the steps of this section by selecting product as "SuperPad for Windows Mobile."

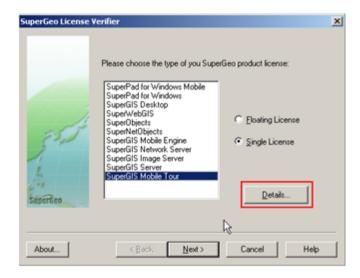
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License Status



License Status

Before obtaining a license, you could click **Details** to know the license status of the software. Select the software you want to know and click **Details**.



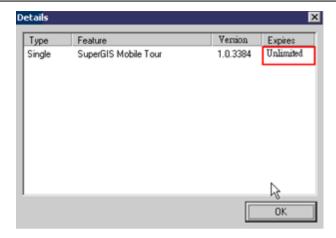
The "Details" window for the selected software shows up. There are four messages released in the window:

Type: the ways to obtain a license. Single means license for one single computer; Floating means a floating license for use of software through internet.

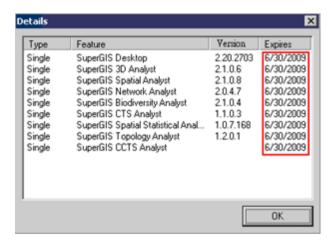
Feature: a licensed software.

Version: the version of the software.

Expires: if your software is an official version, the expiration will show "Unlimited" as presented in the square of the figure below.



If your software is a trial version, the expiration will show the expiry date, as presented in the square of the figure below.



If there is no license for selected software, "License Unavailable" window will pop up, as the figure presented in the following. This means that you have to continue the following steps to obtain a license.



If you tap **About**, the version information dialog box shows.



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Chapter



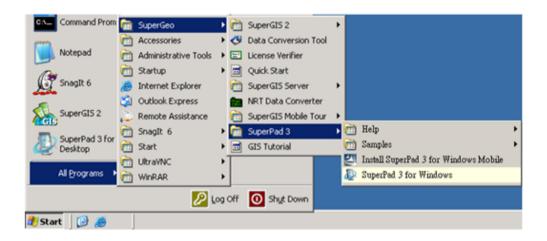
5 Starting SuperPad

5.1 Starting SuperPad in Desktop Computer

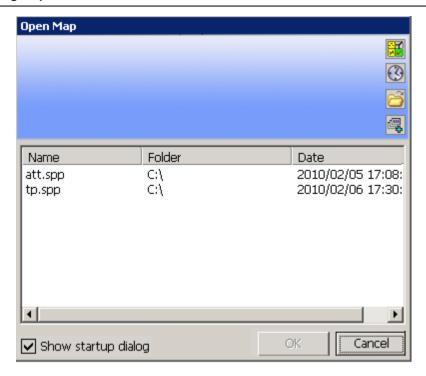


Starting SuperPad in Desktop Computer

1. Click Start > All Programs > SuperGeo > SuperPad 3 > SuperPad 3 for Windows.



2. SuperPad starts.



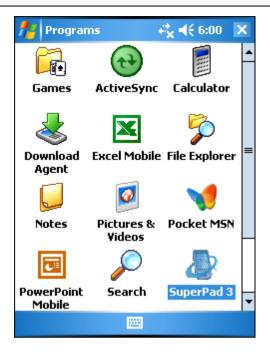
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5.2 Starting SuperPad in Smart Device



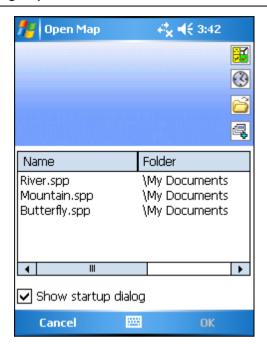
Starting SuperPad in Smart Device

1. Tap Start > Program Files > SuperPad 3 on your mobile device.



2. SuperPad starts.

Starting SuperPad



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Chapter



6 Opening Map and Layer

6.1 Map



Map

After SuperPad starts, please add files first to start to use all the functions. You can open an existing map file (*.spp) or you can add many different layers to produce a new map file. Or even you could create new layers and generate a new map file with the new layers.

SuperPad map file (*.spp) contains all the map related settings, such as map scale, spatial reference, map center, background, etc. SuperPad 3.3 supports SPP (*.spp) file of SuperPad 3.3 and SWG (*.swg) file of SuperWebGIS. That is, the map files created by SuperPad 3.3 and SuperGIS series products are exchangeable, which expands the use of data and enables one map to be used in different software for different purposes. However, SuperPad 3.3 can only read and browse SPM file (*.spm) of SuperPad 2, but cannot store SPM file (*.spm) of SuperPad 2.

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Open Map



Open Map

Start SuperPad, and "Open Map" dialog box shows up. If "Show startup dialog" item is unchecked in the <u>Misc</u> tab of System Settings, "Open Map" dialog box will not show up. About the "Show startup dialog" settings, please refer to System Settings, the <u>Misc</u> tab.

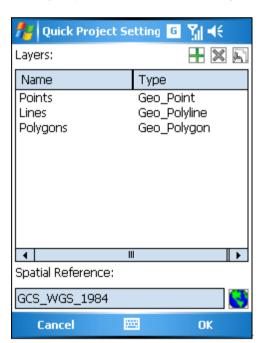


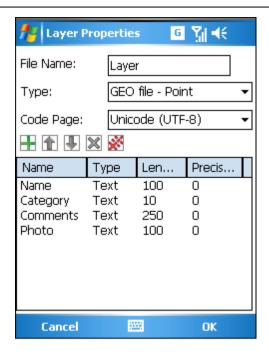
In "Open Map" dialog box, some map files (*.spp) are listed here. Select the map file to

open and tap **OK**, and the selected map file opens. The listed map files come from the folder set in "Default Maps and Data Path" in <u>Path</u> tab of System Settings. About the settings of "Default Maps and Data Path" please refer to System Settings, the <u>Path</u> tab.

There are four buttons on the upper right side of the dialog box, and we will explain the functions by each.

Create Quick Project. If you want to add new layers and make them into a map, you can use this function which creates multiple layers and attribute fields by default; thus, you can create the new layers more rapidly. If you need to add more layers, please tap to add. Tap to delete the selected layer. Tap to enter the dialog box of field data of the layer. Tap to specify the spatial reference. As to the way to create layer, please refer to Feature Layer.





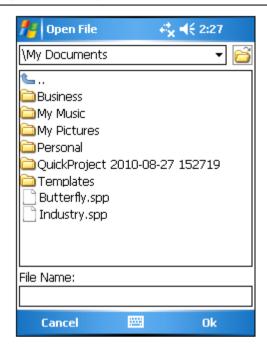
A project list shows up when the project is created.



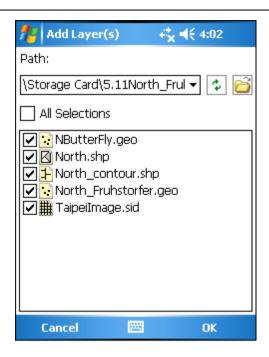
End of System Settings, will be listed in the square below. If you tap the button the Recent Maps will be shown in the square below as well.



Open map. Tap the button and enter the "Open File" dialog box in which you can select the map project file to open.



Enter the "Add Layer(s)" dialog box and select the layers to add to the map.



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New

Мар



Мар

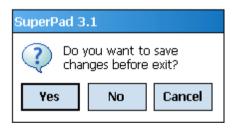
A new map appears if you do not select a map project.

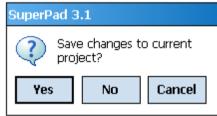


1. If you are manipulating SuperPad and want to open a new map file, please tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, tap the downward arrow of **Open Map >New > Map**.



A query message will show up and ask whether you want to save the current map or not.





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Quick Project

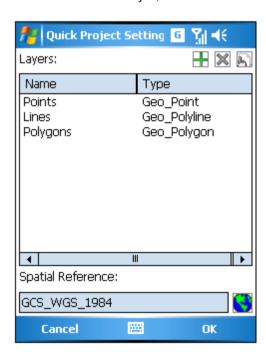


Quick Project

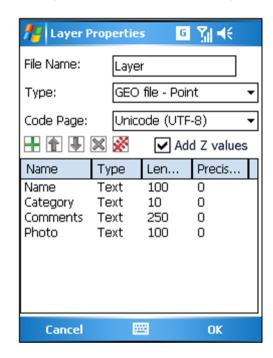
1. Tap Map/Layer button on the main toolbar, switch to Map/Layer toolbar, tap the dropdown arrow of **Open Map > New > Quick Project**.



2. Enter the Quick Project Settings dialog box. You will find one point layer, one polyline layer and one polygon layer are created by default. Click to set spatial reference. Select a layer, click .



3. Enter the Layer Properties dialog box where you can set up the filename of the new layer, type, codepage and the fields. Four fields are created by system as default settings or you can add or delete fields according to your need. As to the detailed settings, please refer to **Feature Layer**.



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Feature Layer



Feature Layer

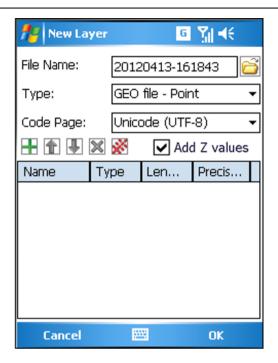
The new created layer will be added to the current map automatically and under the editable status in SuperPad. There are three types of layer provided for users to create or edit in SuperPad, including Point, Line and Polygon.

1. Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, tap the

downward arrow of Open Map > New > Feature Layer.

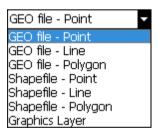


2. The "New Layer" dialog box shows up, please input the field data as below:



File Name: give a name for the file. Tap and choose a folder to store the creating layer.

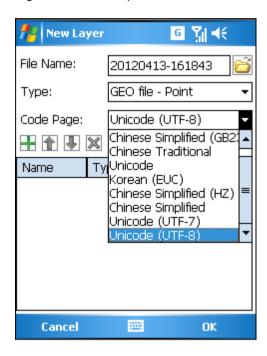
Type: tap the dropdown arrow and the layer type list shows up. It offers two different file types, *.geo and *.shp for each Point, Line and Polygon format.



Code Page: to select the code page for the layer that is suitable for the area and culture. Code Page is also termed as "character encoding" which consists of a table of values. The combination of values can make into characters, and the combination of characters make into texts. Through this way, the values can be used to represent a specified language. People in different areas use different languages; even the same language might be used in a different way with different habits or idioms in different

areas. Through the code page you can specify the area and culture and then select the corresponding texts to display. Please select the code page suitable for the language and area so that the situation of unreadable character can be avoided.

Add Z Value: New feature in SuperPad 3.3, by checking up this option, user are allow to edit the Z value in geometry of each vertex within the features, or collect the real time observation height via GNSS. To edit the Z value, you will find it easy to operate by using the Feature Properties function in Feature Properties Tool.

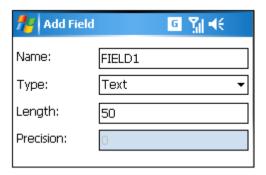


3. Then add the field. You will see a row of tools 1 1 2 2 2 2. Tapping the button can add attribute field, and you will enter "Add Field" dialog box. Then please input the information below:

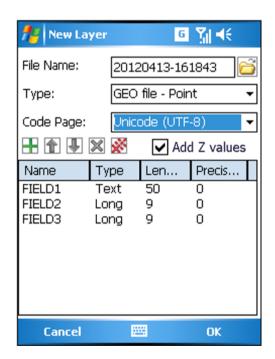
Name: give a name for the field.

Type: specify the attribute value of the field is text or numeric. The numeric values include four types, Short, Long, Float, and Double.

Length & Precision: if you select Text in the Type field, Length will be able to be set up. If you select the numeric type as Short, Long, Float or Double in Type field, the system will automatically give a default value in Length and Precision fields. So the two fields will be unable to be modified.



4. As you finished the information input, tap **OK** and return to the "New Layer" dialog box. The newly created field will be added to the list. Please follow the steps described above to add more needed fields.



You can select a field and tap to adjust the order. Also you can tap x or to delete the selected field or all fields. As the fields are successfully added, tap "OK."

Then you can start to edit the layer, we will explain how to edit layer in Edit Features.

NOTE: You need to create one field at least. Field names are not allowed to be repeated or the system will be unable to read data correctly.

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Photo Layer



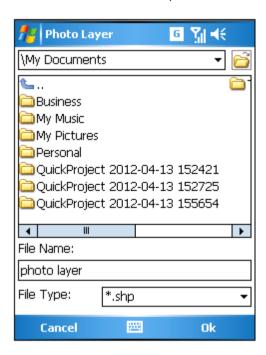
Photo Layer

Photo layer is created by using GPS function and camera function of smart device. The pictures with coordinate information can be connected to the point features of the layer through SuperPad hyperlink function. Once users tap the feature of photo layer, the linked picture will reveal through hyperlink.

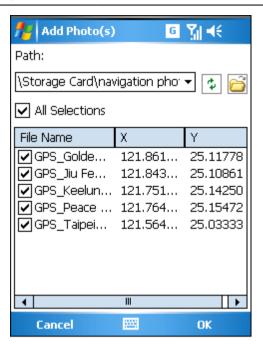
1. Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, and tap the downward arrow of **Open Map > New > Photo Layer**.



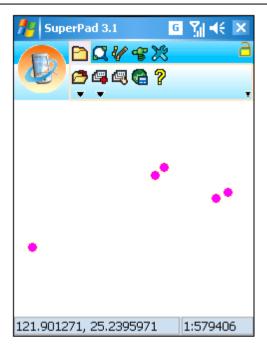
2. "Photo Layer" dialog box shows up and tap in Path to select the folder to save the photo layer. In File Type select the format for the photo layer; three are three options, *.geo, *.shp and *.sph. Please note that *.sph is a dynamic photo layer, which will be described later. Then tap **OK**.



3. Then you will enter "All Photo(s)" dialog box. Select the folder which saves the photos to add and check the photo(s) that you want to add to photo layer in File Name. If you want to select all, check All Selections and tap **OK**.

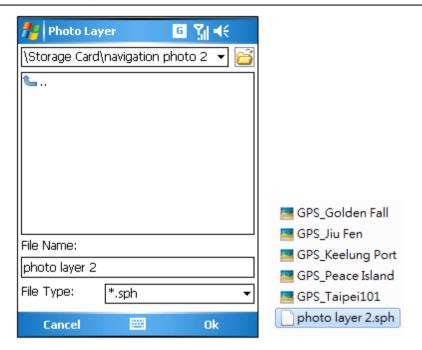


4. Back to the map window, the photo layer is added to the map.

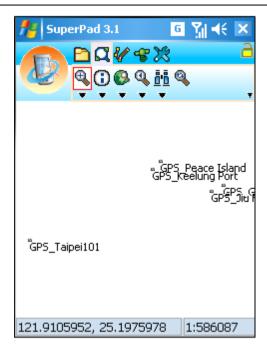


SPH Format

If you want to save the picture layer in *.sph format, firstly please select the folder to save the picture layer. The selected folder should contain the pictures you want to add to the picture layer.



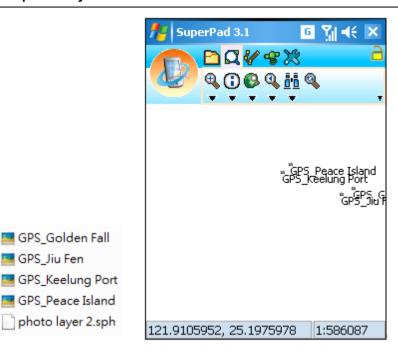
When the picture layer is saved, all the pictures with coordinates in this folder will be automatically added to the layer.



After that if the pictures in the folder are added or removed, the *.sph layer contents will change correspondingly. For instance, if the picture of Taipei101 is removed from the folder, when you open the *.sph layer, there is no longer Taipei101 feature on the picture layer. In other words, *.sph dynamically changes the layer contents if the pictures in the folder are added or removed.

GPS_Golden Fall GPS_Jiu Fen

GPS Peace Island



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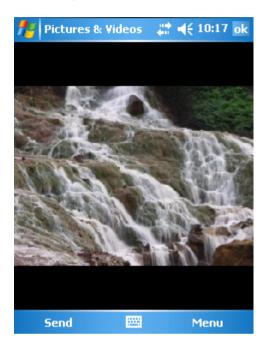


How to open the photos of photo layer?

1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the downward arrow of **Identify** > **Hyperlink** on the menu.



2. As <u>Hyperlink</u> function is activated, tap on the map screen with stylus (or mouse), the photograph linked to this feature will automatically show up on the window.



NOTE: the photo layers are created in point format. The point feature on the photo layer is the coordinates of the picture. The folder used to save the pictures taken by SuperPad can be set in **System Settings**, please refer to **PDA Pictures**.

The pictures used in photo layer should contain coordinate information, and how is the coordinate information generated? First of all, you should make sure the smart device you want to use to take pictures is equipped with GPS function and ensure the GPS settings correct. After that, go to the **Camera** tab of System Settings in SuperPad and set "Save X, Y coordinate." As to the Camera settings, please refer to **PDA Pictures**. When GPS position is successfully received, tap the **Camera** function. The PDA will enter the camera mode, and then you can start to take pictures. Follow these steps to take pictures and the pictures will contain coordinates.

PDA Pictures



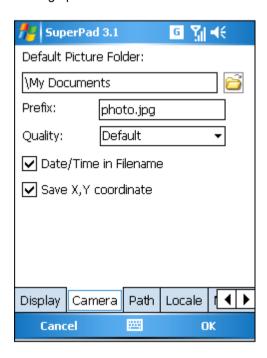
PDA Pictures

To take the PDA pictures for the creation of photo layers, you need to set up the related settings before taking pictures.

1. First, tap the System Settings button on the main toolbar, switch to System Settings toolbar and tap **System Settings**.



2. "System Settings" dialog box shows up and tap the <u>Camera</u> tab, then select the setting options.



Default Picture Folder: set up the path for the folder to save the pictures. In other words, you save the pictures in this folder. While you are creating a photo layer, you just open the same folder to obtain photo files instead of spending time on searching.

Prefix: set up the prefix of the pictures file, and the default is "photo." The pictures format is JPG (*.jpg), which will be automatically added to file as the extension. For example, the settings are set to record data and time, so the file name will be "photo-20090527110605.jpg."

Quality: set up picture quality. There are four options including Default, Low, Normal and High.

Date/Time in Filename: record the date and time in filename. If you check "Date/Time in Filename", the file name will be "photo-20090527110605.jpg."

Save X, Y coordinate: if you want to produce photo layers with these photos, please do check "Save X Y coordinate."

NOTE: in terms of layer, in addition to the above described supported formats, you can also use SuperGIS Data Conversion Tool to transfer files of different formats to SuperPad accepted files and used in SuperPad so that the performance of display and manipulation can be enhanced.

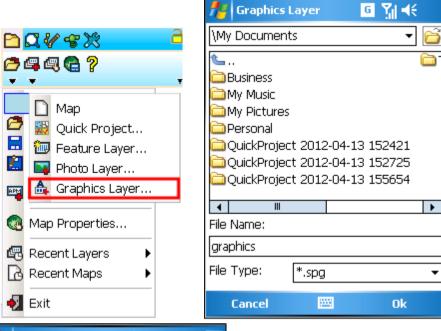
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Graphics Layer



Graphics Layer

Graphics layers are to annotate the general layer with text and feature symbols to facilitate users to clearly understand the annotation information. For instance, if a dangerous area in Layer A needs to be annotated, you can use Graphics Layer to create a layer for displaying annotation on the map rather than set the attribute fields; the format is *.spg. Please see the figure below that Dangerous Area rectangle is the symbol feature of the Graphics Layer which clearly marks the location but will not influence or damage the original contents of layer.





On one Graphics layer, the various kinds of graphics including text point, text polyline,

text polygon, text rectangle and text ellipse can be added at a time, and the style and text of each graphic can be set respectively. As to the way to edit graphics layer, please refer to **Edit**.



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Open Map

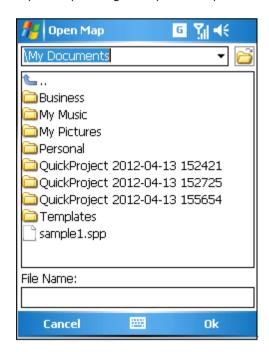


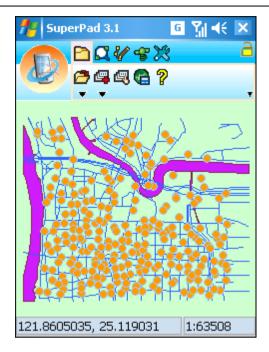
Open Map

1. Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, tap **Open Map**.



2. "Open Map" dialog box opens and please choose the map file desired to open.





Note that you might add any map you want to use.

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Save Map/Save Map As



Save Map/Save Map As

Tap the "Map/Layer" button on the main toolbar, tap the "Open Map" downward arrow > "Save Map/Save Map As."

The map will be stored in the original file or as a new map file in the format of *.spp.



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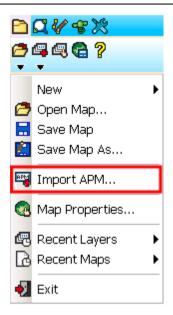
Import APM



Import APM

SuperPad supports to import ArcPad map files (*.apm).

 Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar; tap the downward arrow of Open Map > Import APM.



2. Select a file to open in SuperPad.

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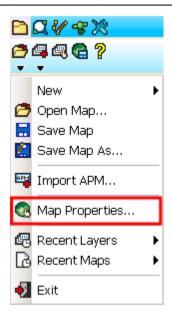
Map Properties



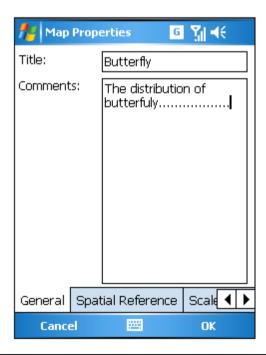
Map Properties

In **Map Properties**, you could set up the properties of the current map, including title, comments and spatial reference as the information for other users to better know the map.

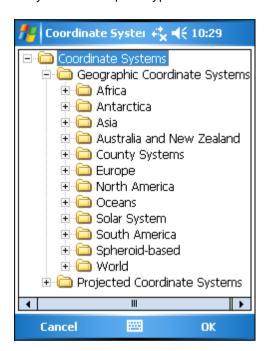
1. Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, and tap the downward arrow of **Open Map > Map Properties**.

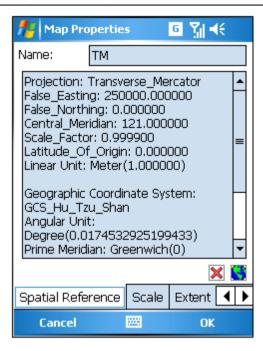


2. "Map Properties" dialog box shows up, and you could edit the title and comments of the map in the General tab.

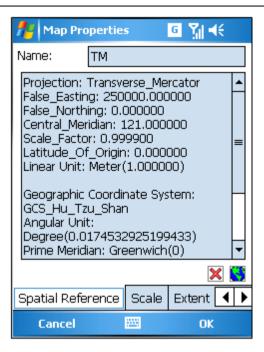


In the Spatial Reference tab and you can set the map's coordinate system. The map's coordinate system can be modified by tapping the earth button at the lower-left corner. The "Coordinate System" dialog box shows up after the earth button is tapped. Here you can set up the type of Datum or Projection.

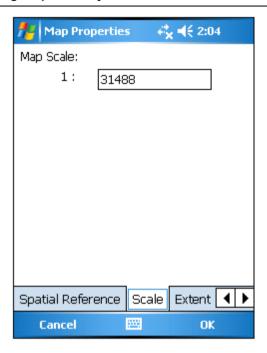




After selection, tap **OK**, it shows the selected coordinate title and details in the "Map Properties" dialog box. Or you can tap **X** to remove the spatial reference.



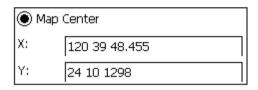
In Scale tab, you can assign the map scale.



In the Extent tab, if you select Map Center, please enter XY coordinate values and the map will be panned to the extent in which the specified coordinates is the center. If you select the Map Extent, please enter the boundary values, and then the map will be zoomed to the extent with the four specified coordinates as the boundaries.



Please note that if you want to enter the coordinates in the format of Degree Minute Second (DMS), please separate the values of degree, minute and second by space. Please see the figure below, X means 120 degrees 39 minutes and 48.455 seconds.



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Recent Layers



Recent Layers

Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, and tap downward arrow of **Open Map** > **Recent Layers**. A list of layers that are recently opened shows up. As you tap one layer from the list, it will be automatically added to the map.



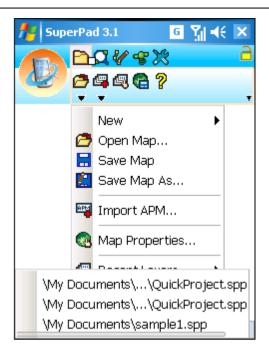
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Recent Maps



Recent Maps

Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, and tap the downward arrow of **Open Map > Recent Maps**. A list of maps that are opened recently shows up; please select the one you want to open. Then the map will automatically load in.



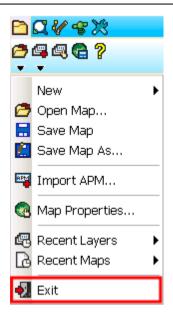
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Exit

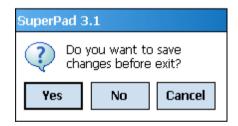


Exit

Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, and tap the downward arrow of **Open Map > Exit** to close SuperPad.



If you have not saved the map file, a query box will show up and ask whether you want to save the file.



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6.2 Add Layer



Add Layer

GIS map is the display of overlaying many different typed layers, consisting of many

different layers. It supports two types of layer: Feature Layer and Raster Layer. SuperPad 3.3 supports GEO layer, which is the Supergeo self-developed vector data format. A GEO layer has two files. One is the GEO file (*.geo), used to record the spatial data containing feature information and spatial information; the other is DBF file (*.dbf), used to record the attribute data, in which every record of attribute corresponds to a property of the feature in GEO file. Vector layer includes three types of layer as point layer, line layer and polygon layer.

Besides feature layers, SuperPad supports many different imagery files in raster layer. Overlaying feature layers and raster layers enables users to compare data, highlighting the theme of files. The supported raster files include ECW(*.ecw), MrSID(*. Sid), JPG (*.jpg), GeoTIFF (*.tiff), JPEG 2000(*.jpeg) and SuperGIS Raster SGR (*.sgr) Supergeo self-defined. The world files always accompany raster layers to describe the datum information for the image. Moreover, raster layer can only be displayed in SuperPad, but cannot be edited.

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Add Layers

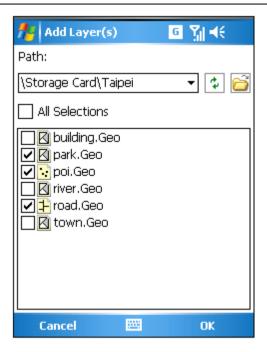


Add Layers

 Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, tap Add Layers.



2. "Add Layers" dialog box opens. Check the layers desired to add. ☑ is point layer, ☐ is line layer, ☐ is polygon layer and Ⅲ is image layer.



Note that you might add any layer(s) you want to use.

3. The selected layers are displayed on the map.

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Layer Files

Import/Export



Import/Export

SuperPad supports SLR (*.slr) layer file, which is compatible to the SuperGIS series products, so the layer files are able to be used in SuperGIS series products, too.

Tap the "Map/Layer" button, switch to "Map/Layer" toolbar, tap the downward arrow of

Add Layers > Layer File. Select Import or Export to import the specified SLR file or export the file in a new SLR file.



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6.3 Save Screen



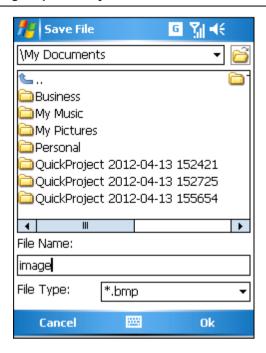
Save Screen

Save Screen function is a lot like desktop computer's Print Screen function. When you need some screen image in manipulation, **Save Screen** function can be used.

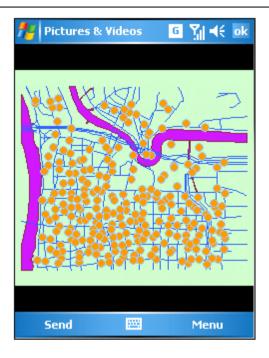
 Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar; tap the Save Screen button on the toolbar.



2. The "Save File" dialog box appears, please enter the file name and choose the file type(*.bmp, *.jpg, *.gif and *.png).



3. Open the file.



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6.4 About SuperPad



About SuperPad

Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, tap
 About SuperPad and the dialog box that shows version and copyright of SuperPad
 program shows up.



2. Tap **OK** to close the dialog box.

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Quick Reference (for PC version)



Quick Reference (for PC version)

It provides a quick reference for the tools.

Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, and tap downward arrow of **About SuperPad** > **Quick Reference**. And the Quick Reference shows up.



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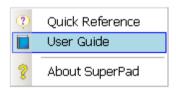
User Guide (for PC version)



User Guide (for PC version)

The online user manual is provided.

Tap the Map/Layer button on the main toolbar, switch to Map/Layer toolbar, tap downward arrow of About SuperPad > User Guide and the online manual displays.



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Chapter



7 Layer Management

7.1 Layer Manager

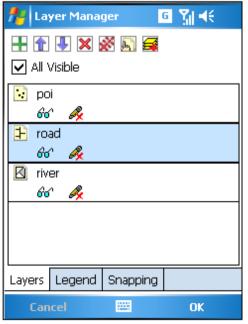


Layer Manager

Map is the result of overlapping different types of layers, including point layer, line layer, polygon layer and image layer. Each layer can be set to display in different ways, for example visibility, edit ability, the overlapping order, etc. As to the detail settings of a single layer, such as symbol, visible scale, and hyperlink or so, are set up in Layer Properties.

Tap the Map/Layer button on the main toolbar, and tap **Layer Manager** to enter the "Layer Manager" dialog box. There are seven options at the top of the dialog … Among the seven options, <u>Layer Properties</u> covers much more contents and will be explained in another section independently.





Note that you might add any layer(s) you want to use.

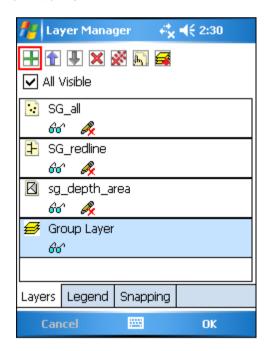
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Adding Layer(s)



Adding Layer(s)

to add from the directory. Back to the "Layer Manager" dialog box, you will find the layer(s) you just added are added to the list now.



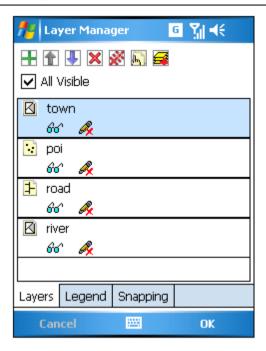
© 2015 Supergeo Technologies Inc. All Rights Reserved.

Adjusting Layer Display Order



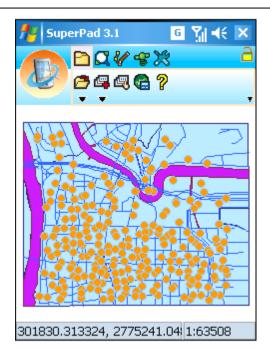
Adjusting Layer Display Order

Map is the display of overlapping many different types of layers. However, sometimes layers might mask the display of other layer(s). For example, the polygon layer might mask the display of point layer. GIS map is the result of overlapping many layers. Therefore, if the bottom layer is a point layer or a line layer whose features possess smaller area, the upper polygon layer, whose features possess larger area, might cause the bottom layer partial invisible. Thus, the point and line layers will not display clearly on the map. By viewing the icons on the left side of the layer name, you can learn the layer type, in refers to point layer, if refers to line layer, if refers to polygon layer, and if refers to image layer. The icons offer helpful information for adjusting the overlapping order. We suggest you to adjust the layer order right after the layers are added. If you want to add image layer, we suggest you to place it in the bottom place to avoid its large image covering other layer's display. Therefore the recommended order will be impoint layer > image layer from top to the bottom.



As you are adjusting the layer order, you need to select a layer first. When the layer is selected, tap and the selected layer will be moved upward by one place; tap and the selected layer will be moved downward by one place.

After you have settled the order, tap **OK** and back to the map. You will find that the order changes based on the settings.



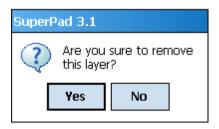
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Deleting Layer(s)



Deleting Layer(s)

 \Join : Delete layer(s). Select the layer that you want to delete and tap \Join . A query dialog box shows up. If you are sure to delete the selected layer, tap **Yes** to delete; if you do not want to remove the layer, tap **No**.



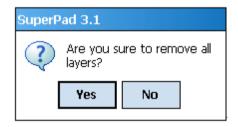
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Removing All Layers



Removing All Layers

*: Remove all layers. If you want to delete all layers at a time, tap * directly without selection, and a query dialog box appears. If you are sure to remove all layers, tap **Yes** to remove all layers at a time; if you want to cancel, tap **No**.



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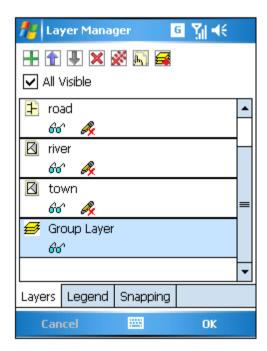
Group Layer



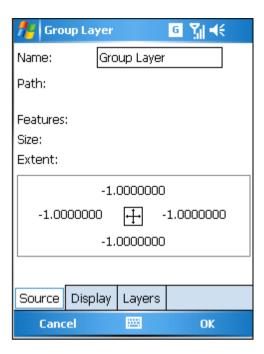
Group Layer

Users can select several layers and make them into Group Layers by using Group Layer function, so editing and managing map become more convenient. If you need to manage layers by viewing several layers as one layer, you can set these layers a Group Layer. For instance, to one river layer and one irrigation channel layer, you can make them a Group Layer and name it "Hydrology data." The display of Group Layer is just like the way ordinary layer displays. However besides the group layer name, all of the contained layers are listed below the Group Layer. To each layer in the Group Layer, the properties and visible scale can be set individually or you can directly set up the visible scale for the entire Group Layer. As to the display order of the layers in Group Layer, it can also be set in Group Layer Properties. If the visible scale of the Group Layer conflicts with that of the layer under it, the system will apply the Group Layer's setting as priority.

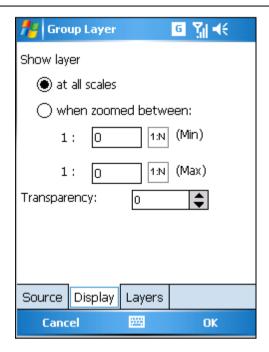
1. Click Group Layer and a Group Layer is added to the map. Select the Group Layer and click the Layer Properties to enter the dialog box to set up the properties.



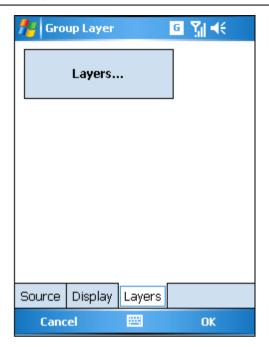
2. In the properties dialog box, there are three tabs, Source, Display and Layers which can be set. In the Source tab, the name of the Group Layer can be set. And it shows the path, feature amount, size and extent of the group layer..



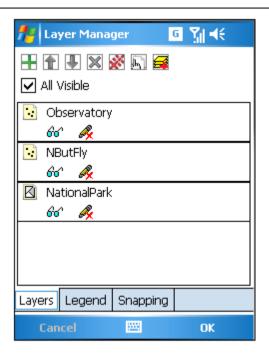
3. In the Display tab, the visible scale and transparency can be set for the Group Layer. The way to set up Display tab is just the same way as setting up the ordinary layer.



4. In the Layers tab, you can add layers to Group Layer.



5. In Layers tab, click **Layers** to enter the "Layer Manager" dialog box. Click to add layer. Just like the way to manipulate the ordinary layers, the order of the layers in Group Layer can also be adjusted; the layer in group layer can be deleted as well. Click to enter the "Layer Properties" dialog box and set up the settings for each layer.



6. Or you can continue to add a new Group Layer under the Group Layer you already built by tapping .

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Setting Visible



Setting Visible

You might add many layers at a time, but sometimes you might want to hide some specific layer(s). For example, a Rest Area layer is not necessary to display on the map all the time, but you need to know the position occasionally. Or you might need to display some layer(s) in some special condition. For example when you are editing layers you can set the image layer invisible to save the loading time; till you want to display the image layer then set it visible. In situations like this, you can set up whether to allow layers visible or not.

In the "Layer Manager" dialog box you can see all the layer names of the added layers listed below. You will see ''' under the layer name, which means this layer is visible on the map; if you tap the icon, it becomes '', which means this layer is invisible on the map. If you want to set all layers visible, please check **All Visible** at the top of the layer list then all layers display on the map.

NOTE: Crossing out layer's visible icon does not means that the layer will be removed but means the layer will not be redrawn on the map. Though the layer does not display on the map, you still can create new features and edit attribute data to it. However, the created features will be invisible on the map. Only in visible status, the created features of the invisible layer can be seen on the map. Another situation is like that only in visible status can you use **Select Feature** tool to query and edit the existing features on the map.

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Setting Editable



Setting Editable

On the map you might add many layers, and you may add more than one layer of the same type. For example, two line layers, two point layers and two polygon layers are added to a map. When you would like to edit point features from layer which is one of the point layers, the system cannot recognize which point layer you intend to edit. Therefore, we need to specify that only one layer of a type of layers is editable. In other words, at most one point layer, one line layer and one polygon layer can be set editable at a time. Then, the system can correctly judge the editing acts are made to which layer. As a result, only one layer of one type is able to be set editable.

At the bottom of the "Layer Manager" dialog box, a list shows all of the layers. And you can see below the layer by default, which means the layer is in-editable; if you tap the icon again, it becomes , which means editable. You can determine whether to set the layer editable or not by directly tapping this icon. Moreover, only one layer of one type (point layer/line layer/polygon layer) is able to set editable. Thus, if you

already set point layer A editable and you want to set point layer B editable, you can tap of layer B to switch to . Then, you will see layer A automatically switch to . The final result is only layer B is editable.

NOTE: Raster image layer can be displayed only but is unable to be edited.

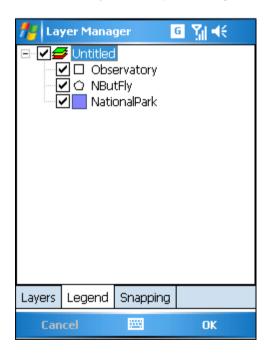
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Legend



Legend

In addition, there are three tabs at the bottom: Layer, Legend and Snapping. In Legend tab, click \blacksquare and you can expand all legends of the map.



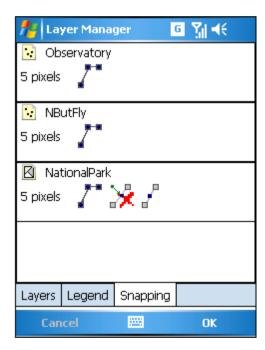
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Snapping

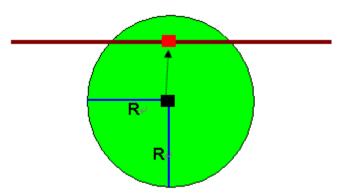


Snapping

Snapping, when users are creating or editing features, they can precisely snap features to another existing feature within the specified snapping tolerance. For instance, to two neighboring farmlands, which share the border, you need to ensure they snap to each other exactly. And Snapping is the tool that can help you easily achieve the goal.



In Snapping tab, the snapping properties and snapping tolerance can be set. The snapping tolerance is a specific distance which is the radius the mouse cursor or stylus moves. If encountering the parts of feature that are set to be snapped to within the tolerance distance, the system will automatically snap the mouse cursor or stylus to the new position.



Snapping tolerance is used as the radius

In Snapping tab, you can enter the tolerance by yourself, the unit is pixel and you can tap Pixel with stylus to modify the value. The snapping properties refer to the parts of the existing feature to which you want the editing features to snap. The snapping

properties include Vertex , Edge , Midpoint and Endpoint .

Vertex: snap to each vertex of each feature of the layer.

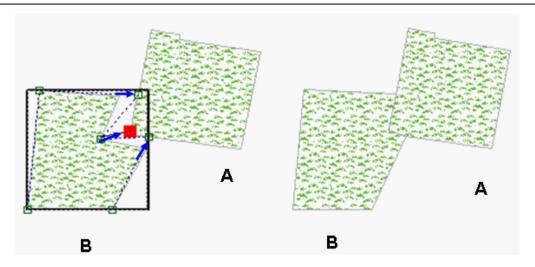
Edge: snap to all edges of each feature of the layer.

Midpoint: snap to the middle point of an edge between two vertices.

Endpoint: snap to the start or end point of a polyline feature.

To Point layer user can only set whether vertex is to be snapped to; composed by vertices, polyline can be set whether to be snapped to vertex, edge, midpoint or endpoint; as to polygons, you can set whether to snapped to vertex, edge or midpoint.

For instance, in order to snap vertex and edge of farmland A and B, the vertex and edge need to be set available to snap to. As a result, in editing farmland B, the cursor or stylus will automatically snap to farmland A's vertex or edge when the cursor or stylus moves in the tolerance.



In editing feature B, move the vertex to approach the position of feature A where you want to snap to. As the distance is less than the snapping tolerance, the vertex automatically snaps to feature A at the position where the square indicates. After the editing is finished, confirm and write in the editing. The snapped features present as the figure at the upper-right; the two features share some the border seamlessly. Snapping is finished.

Please refer to **Move Vertex** to learn the way to operate snapping.

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7.2 Layer Properties



Layer Properties

In **Layer Properties** you can set up the properties of each single layer, including layer source, fields, symbol, visible scale, label, hyperlink, etc. While the image layer has three settings only including Source, Spatial Reference and Display, but for DXF and DGN files Symbology is additionally able to be set particularly. Now we are going to explain the settings respectively.

Please select a layer you want to review and tap to open the <u>Layer Manager</u> of the selected layer or double-click the layer you want to select directly to enter. There are totally seven tabs at the bottom of the dialog box: <u>Source</u>, <u>Spatial_Reference</u>, <u>Display</u>, <u>Symbology</u>, <u>Hyperlink, Fields</u> and <u>Label</u>. Tapping the leftward or rightward arrow can move the tabs.

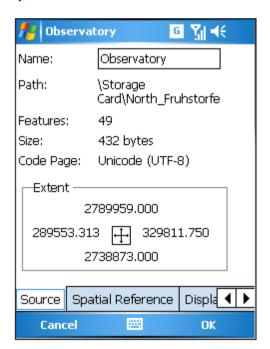
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Source



Source

Source tab displays the information of name, path, features, size, code page and extent for your reference. Please note that data revealed in this tab is for your reference only, which is unable to be modified.



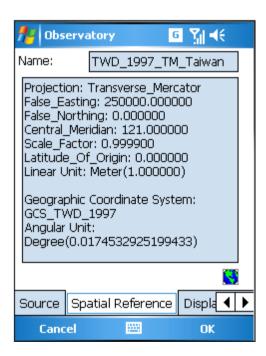
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Spatial Reference



Spatial Reference

If the layer is defined with coordinate system, the Spatial Reference will show. However if the layer is not defined with a coordinate system, you can tap and set the spatial reference.



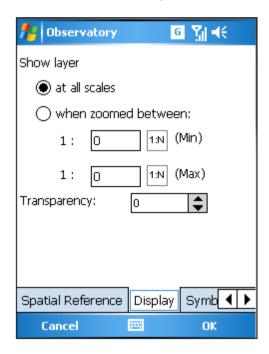
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Display



Display

You can set the visible scale of layer in Display tab. In general, "Show layer at all scales" will be suitable for most situations, but sometimes you might need to show the major layers only, and show the minor layers at some specific scale. For instance, there are "National High Way" and "County Road" layers on the map. "County Road" layer is not very useful as the map extent covers the entire nation, and the map with "County Road" layer will make the screen more massive. On the contrary, users need to know the distribution of "National High Way" more; as a result the "County Road" layer should be hidden. While the map is zoomed to county and township extent, the county road will be needed to display, providing detail information. In such case, you can set up the visible scale to "Country Road" and display the layer as the map scale is zoomed between the settings.



If you want to set "When zoomed between" please tick the option first and input the

Layer Management

maximum and minimum scale. Only as the map is zoomed to the setting scales, will the layer display.

Transparency sets the transparency of the layer that the smaller the value is, the more transparent the layer is.

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Symbology



Symbology

You can set the single symbol of the layer through this tab. As to symbol settings in SLR or SGD project file, SuperPad also support to import and you can display or modify the attributes.

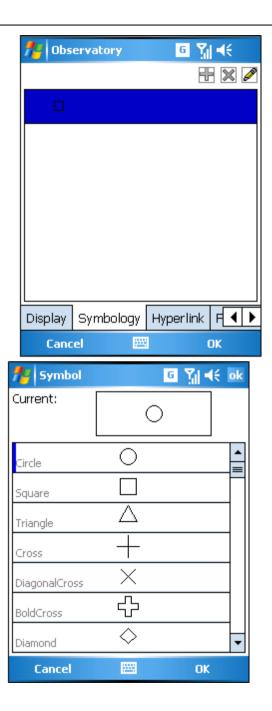
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Point



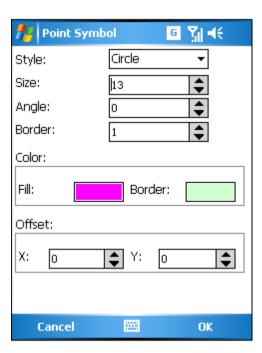
Point

1. Select the symbol, click , and you will enter "Symbol" dialog. Select new symbol from the list below and Current will show the selected one.

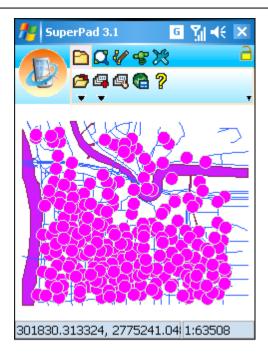


2. Click Current and enter Point Symbol dialog, here you can set the style, size, angle,

border, color and offset.



3. When you finish setting, click OK. Back to the map and you will see the symbol has been modified.



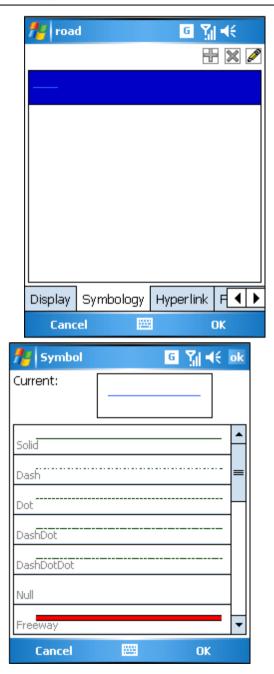
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Polyline



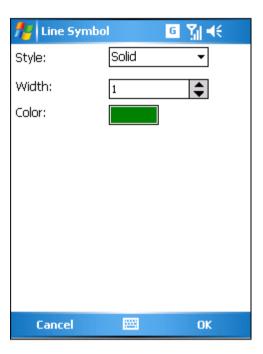
Polyline

1. Select the symbol, click , and you will enter "Symbol" dialog. Select new symbol from the list below and Current will show the selected one.



2. Click Current and enter Line Symbol dialog, here you can set the style, size, angle,

border, color and offset.



3. When you finish setting, click OK. Back to the map and you will see the symbol has been modified.

Layer Management



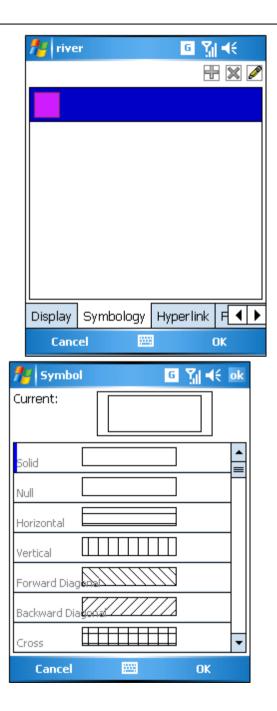
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Polygon



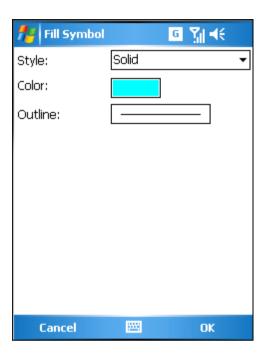
Polygon

1. Select the symbol, click , and you will enter "Symbol" dialog. Select new symbol from the list below and Current will show the selected one.



2. Click Current and enter Fill Symbol dialog, here you can set the style, color and

outline.



3. When you finish setting, click OK. Back to the map and you will see the symbol has been modified.



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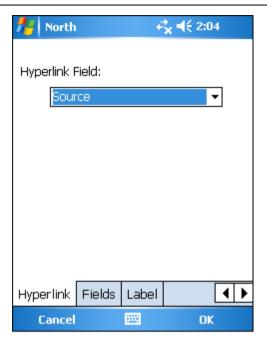
Hyperlink



Hyperlink

If you want to link features to exterior sources, such as files or websites, please create the file paths or website address in the attribute fields as you are creating a new layer. Moreover, in the **Hyperlink** page of **Layer Properties** the setting of linking field should be specified. After all settings are finished, the map displays, and you can use hyperlink function to directly tap features and open the file or link to the website.

1. First of all, tap <u>Layer Manager</u>, select the layer that you want to set hyperlink and tap <u>Layer Properties</u>. Tap **Hyperlink** tab. Tap the drop-down arrow, the display box shows up. Then, select a field that records hyperlink file path or website address.



- 2. Tap **OK** back to the "Layer Manager" dialog box.
- Tap OK to close the "Layer Manager" dialog box. After the settings are finished, you can use the hyperlink function while manipulating map. As to how to use hyperlink function, we will introduce in the Hyperlink.

NOTE: if you want to link to some specific websites, please make sure the Internet service is ready. Sometimes you might encounter some significant situations in which the link cannot work successfully. Then, please check the cases as below stated:

Lack of extension: If the hyperlink is to link the exterior file, please do remember to add the extension by the end of the file name.

Lack of suitable program: The linking file might be unable to open if you do not have the suitable application to open or files in wrong file format.

Incorrect file path: The file might not open when the application cannot find out the file you specify with a correct path. Please check whether the file path settings in attribute data are correct.

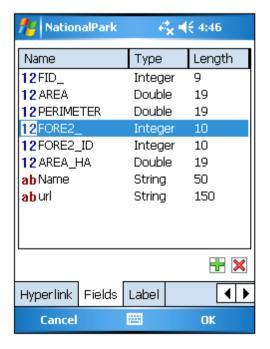
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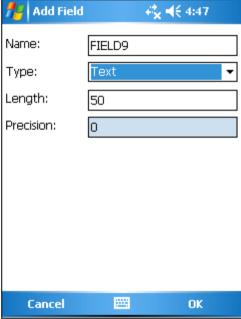
Fields



Fields

Fields refer to the attribute fields. The Field page in <u>"Layer Properties"</u> dialog box shows the type and length of all the attribute fields. To the left field name you will see the label of 12 or ab.12 represents the text type is numeric, ab represents the type is string, from which you can recognize the type of field text. Users are able to add or delete fields to a layer as the target layer is not editable. Tap to add new fields and set up the name, type, length and precision.





Tap X to delete the selected fields, please tap Yes.

Layer Management



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Label

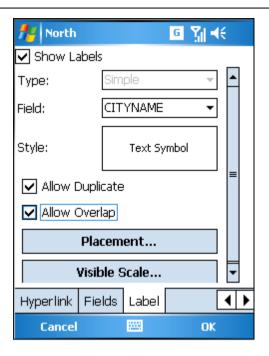


Label

It refers to the text label. As annotators of features are displayed on the map, users can recognize the information easier and get the layer information. Label is to mark the attribute values of a specified field on the map for users to recognize. So, as users see the features, they can know the attribute values through the label, or even find out the position of feature by the labeled attribute value.

For instance, let's take Taipei City districts for example. If you want to mark the district names on each district for users' easier understanding of the district's name and position, the label function can be used to achieve the goal. So, you will see the administrative districts with name shown on the map.

1. First of all, enter Layer Properties, tap the Label tab, entering the "Label" dialog box.



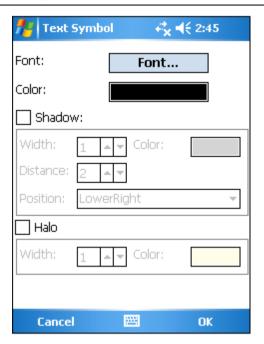
2. In the next, check Show Label and set up the following items:

Type: two options, Simple and Line. What should be noted is that you can select Simple for point, line or polygon layer, but can only select Line for Line Layer. Line is not available for point or polygon layer. Why does line layer have a particular line type to choose? This is because in line layer the text of label can be divided into along line or not, repeated text or not and the problem of orientation of text position, which is more complex and needs to do special treatment. If you select Line type for the line layer, the Placement item will offer different contents from selecting Simple type. Later in the Placement part we will respectively explain the options provided for selection of Simple and Line, and now we take Simple as the example.

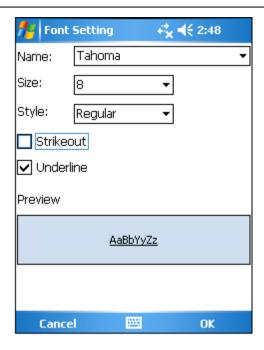
Field: to specify the field to mark label.

Style: tap Text Symbol entering "Text Symbol" dialog box. Here you can set up Font, Color and whether to display Shadow and Halo effect.

Layer Management



- 3. To set up font, please tap Font, and enter "Font Setting" dialog box.
- 4. Tap the drop-down arrow of Name, Size and Style to set the name, size and style of the font by each. Style includes four styles of regular, bold, italic and bold italic for your options. Besides, you can choose whether to use Strikeout and Underline effect. If the Strikeout effect is checked, the strikeout effect preview will display in the square below.



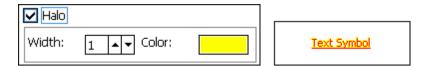
5. If you want to set Shadow effect, please check Shadow item and set up Width, Color, Distance and Position.

Width: width of the shadow. Color: color of the shadow.

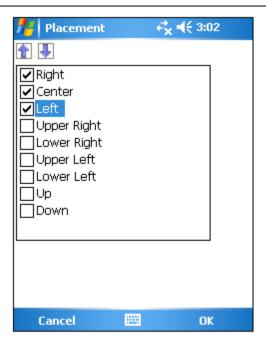
Distance: the distance from the shadow to text. **Position:** the relative position of shadow to text.



6. If you want to set up Halo effect, please check the Halo item and set the Width and Color. What is halo effect? It is to spread out a color zone with some width to enhance the visual effect from the edge of the text, just like circling the text with a color zone and extent slightly outwards, such as Iext Symbol. The yellow zone is the halo effect display. After all settings are finished, please tap OK and back to the Label page to preview the display with the settings. If you want to adjust, tap Text Symbol again to modify.



7. Placement: the label can be divided into two kinds, for line layers only and for layers of all types of layers. Putting the line layer from the other groups is because in line layer the text can be placed along line or not, repeated text or not and the orientation of text position to the line, which is more complex and needs to do special treatment. However, the layers of the other types need to consider the text layout only. For example, place the text to the center, right, or left to the feature? Or the system can set the various combinations. For example, if the setting orders are set as center priority and up the second, the system will place the labels to the center in top priority. If the center layout will be deterred by something, the system will use the second order setting. In conclusion, system will follow the placement orders to place the text. Besides, line layer and layers of other types both can set the label's maximum and minimum visible scale so that the layer will not be massive due to too many texts on the map. With the visible scale setting, the map looks more comfortable, neatly and easy to read. No matter you choose Simple type for a point, line or polygon layer, when you tap Placement, it shows the identical "Placement" dialog box. Please check the desired placements first, then tap or + to arrange the order.



For instance, the priority orders set Right, Center and Left, referring that the text will be placed according to the priority of right, center and left. If the text will be deterred as placement to the right, system will adjust the placement to the second order-center; if the placement in center also gets deterred, it will be placed to the third-order- to the left.

```
Right- Happy Holiday Hotel

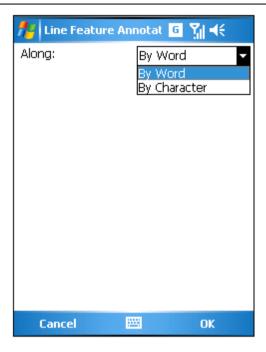
Center- Happy Holiday Hotel Spring Park

Left- Happy Holiday Hotel Spring Park
```

8. If you choose Line type, as tapping the Placement, "Line Feature Annotator" dialog box appears. There is one item to set:

Along: two options, By Word and By Character. Along is used to set whether the text is to display along the line feature or according to the text's original type.

Layer Management



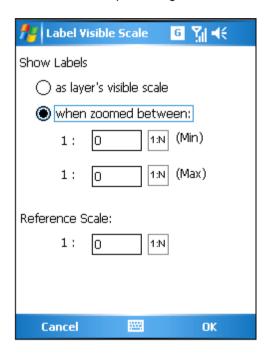
By word means each character of the text is along a line.



While By Character refers each character is along the line feature.

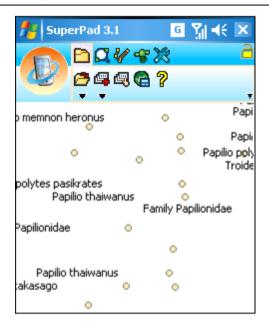


9. Visible Scale: you can set the visible scale "as layer's visible scale" or "when zoomed between." The use of label can give more information, enriching the map with higher value. However, under some situations the labels might interfere the map reading. For instance, when you are viewing the global rainfall distribution, it is unnecessary to mark Taiwan administrative district names on the map, which is of little thematic map meaning and troubles readers instead.

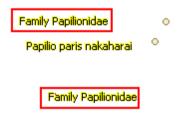


10. The reference scale can display the label at a specific scale ratio. When the map is zoomed in, the label will become larger accordingly; when the map is zoomed out, it becomes smaller. You can tap to acquire the current map scale and set it the reference scale. If the reference scale is not defined, the label will be displayed at a fixed scale, which means the label displays in fixed size no matter the map is zoomed in or out; If reference scale is defined, when map is zoomed in or out, the label will also be zoomed in or out according to the reference scale.

About "when zoomed between", if the minimum scale is set 1:7,000,000, and maximum 1:430,000. After settings are finished, tap **OK** in each dialog and back to the map window. In figure below, you can see the scale at the lower right corner is between the set scales as 1:445,048. As a result, the labels are displayed.



11. Allow Duplicate: if you choose to allow duplicate, please check it; if not, please uncheck it. Sometimes too many labels duplication makes the map layout massive and uneasy to recognize. See the figure below, so one label appears once only, allowing the layout looks more neat and comfortable.



- 12. Allow Overlap: if you choose to allow overlap, please check it; if not, please uncheck it. The annotators might overlap due to the close distance to each other, resulting in unidentified text and massive look; in such situations, we suggest you uncheck Allow Overlap.
- 13. If you consider presenting label messages completely, you can set up Allow Overlap function as figure below. If the overlapping causes the unidentified text, we suggest you to zoom in the map display. So, the label will be clearer. Or you can set up the

label's visible scale based on the most comfortable visual effect, which will show the labels when map is zoomed between the maximum and minimum values you set. Therefore the map looks good and is able to offer sufficient information.



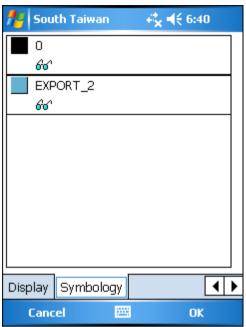
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Image Layer-Symbology



Image Layer-Symbology

Layer properties of image layer include Source, Spatial Reference and Display tabs. But to DXF file in CAD system, it has one more tab of Symbology to set. Symbology is to assign whether the layer is visible and the display color. Except 0 layer is the layer reserved by CAD system, the other layers are designed or created by users on their own. Fefers to visible layer; Fefers to invisible. And the color of the layer symbol can be changed by tapping the left color square to choose new color.





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Chapter



8 Toolbar Overview and Browser

8.1 Three-Tier Toolbar



Three-Tier Toolbar

The three-tier toolbar is newly developed in SuperPad 3.3, which can be described in three tiers.

Main Toolbar: the top tier is the largest class, including six main classes: map/layer toolbar, browser toolbar, edit toolbar, GPS toolbar, system settings toolbar and Internet Application toolbar.

Corresponding Toolbar: in the second row toolbar on the map, the toolbar is corresponding to each main toolbar button.

Tool Menu: the tool menu appears on the third row when users tap the downward arrow of the tool on the toolbar group on the second row.



NOTE: Some of the toolbar buttons only have one single tool without the dropdown arrow. This kind of tools does not have tool menu.

To help users understand the functions of the tools, we will briefly introduce the functions of all tools below.



Icon	Name	Description
	Map/Layer main toolbar	Open, save, add map/layer and layer manager.
Q	Explorer main toolbar	Manipulate map, browse, zoom in/out, pan, identify, bookmark manager and hyperlink.
₩	Edit main toolbar	Select a point/line/polygon feature, edit feature/ vertex and add new features.
*	GPS main toolbar	Turn on/off GPS, record tracklog and GPS navigation settings.
×	System Settings main toolbar	Set up the various system parameters.



Icon	Name	Description
(2)	Open Map	Open a map file.
4	Add Layers	Add one or more layers.
4	Layer Manager	Manage the layers.
•	Save Screen	Save the screen.
?	About SuperPad	The version and copyright of SuperPad.

Open Map tool menu

Icon	Name	Description
	New	Create a new map, quick project, feature layer, photo layer and graphics layer.
(2)	Open Map	Open a map from files.

Toolbar Overview and Browser

	Save Map	Save the map.
Ė	Save As	Save map as a new file.
APM	Import APM	Import ArcPad APM file.
₩.	Print Setup (PC version)	Set print settings.
	Print (PC version)	Print.
•	Map Properties	The name, description and spatial reference of the map.
疊	Recent Layers	The layers that recently opened.
B	Recent Maps	The maps that recently opened.
•	Exit	Close SuperPad.

Add Layer tool menu

Icon	Name	Description
4	Add Layers	Add one or several layers.
儑	Layer Files	Import or export the layer files (*.slr).

About SuperPad tool menu

Icon	Name	Description	
?	About SuperPad	Show SuperPad program version and copyright.	
	User Guide (PC version)	Online manual in PDF.	
(2)	Quick Reference (PC version)	Quick reference of GPS tables and all tools.	

Explorer toolbar

Icon	Name	Description
Ф	Zoom In	Zoom in the map.

(i)	Identify	Query the attribute data.
(S)	Zoom to Full Extent	Go back to the previous map extent
0,	Go Back to Previous Extent	Zoom to cover full extent.
<u>ā'ā</u>	Find	Search features by filtering condition.
Q	Refresh	Redraw the map.

Zoom In tool menu

Icon	Name	Description
Ф	Zoom In	Zoom in the area.
Q	Zoom Out	Zoom out the area.
<u>(*)</u>	Pan	pan the area.
:	Slide Zoom	Slide upward and downward by touching the map to zoom out and zoom in map.
C	Rotate Map	Adjust the map rotation angle.
G	Clear Rotation	Clear the degree of the rotation.

Identify tool menu

Icon	Name	Description
•	Identify	Tap map to query attributes.
Ø	Hyperlink	Tap features to open the linked webs or exterior files.

Zoom to Full Extent tool menu

Icon	Name	Description
(3)	Zoom to Full Extent	Zoom map to cover all layers.
2 S	Zoom to Layer	Zoom map to the range of selected layer.
T.	Go to Bookmark	Move map extent to bookmark extent.

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Go Back to Previous Extent tool menu

Icon	Name	Description
•	Go Back to Previous Extent	Open the previous map screen.
<u>O</u>	Go to Next Extent	Open the next map screen.

Find tool menu

Icon	Name	Description
<u> </u>	Find	Search features by filtering conditions.
I	Create Bookmark	Create new bookmark.
II.	Bookmark Manager	To edit or delete bookmarks.

Edit toolbar

Icon	Name	Description
•	Select Feature	Select a feature to edit.
K	Vertex Edit	Edit the feature's vertices.
•	Point	Create a point feature.
**	Capture Point Using GPS	Add a point feature at GPS position.
%	Add GPS Vertex	Add a new vertex using GPS.
34	Add GPS Vertices Continuously	Add vertices continuously using GPS.
S	Feature Properties	Edit attribute data.
T.	Text Point	Add a text point.

Select Feature tool menu

Icon Name	Description
-----------	-------------

*	Select Feature	Select a feature to edit.
&	Select at GPS Position	Select a feature at GPS position.
*	Clear Edit Selection	Clear the edit selection.
6	Zoom to Selected Feature	Zoom the selected feature to the map center.
&	Move to Selected Feature	Move the selected feature to the map center.
垦	Repeated Attribute	Repeat the attributes of the last created feature.

Vertex Edit tool menu

Icon	Name	Description
4	Vertex Edit	Edit the feature's vertices.
H	Move Vertex	Move the vertex.
A	Insert Vertex	Insert a new vertex into the feature.
1	Segment Polyline	Continue to digital new vertices behind the last vertex.

Point (add point/line/polygon feature) tool menu

Icon	Name	Description
•	Point	Create a point feature (for point layer).
\	Line	Create a line, a line feature (for line layer).
W	Polyline	Create a polyline, a polyline feature (for line layer).
ζ,	Freehand Line	Create a freehand line, a line feature (for line layer).
0	Polygon	Create a polygon, a polygon feature (for polygon layer).
	Rectangle	Draw a rectangle to create a polygon feature (for polygon layer).

Toolbar Overview and Browser

0	Circle	Draw a circle to create a polygon feature (for polygon layer).
0	Ellipse	Draw an ellipse to create a polygon feature (for polygon layer).
Q	Freehand Polygon	Draw a freehand polygon to create a polygon feature (for polygon layer).

Edit Attribute tool menu

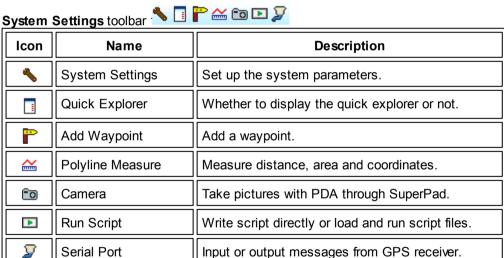
Icon	Name	Description
8	Feature Properties	Edit or modify attribute data.
	Move Feature	Move the feature.
&	Rotate Feature	Rotate the feature.
80	Offset Feature	Offset the feature.
5 0 0 0	Scale Feature	Scale feature with the feature center as the standard.
55	Resize Feature	Resize the width or height of feature.
%	Delete Feature	Delete the feature.

Edit Text Point tool menu

Icon	Name	Description
T.	Text Point	Add a text point for a graphics layer.
T _v	Text Polyline	Add a text polyline for a graphics layer.
To	Text Polygon	Add a text polygon for a graphics layer.
T	Text Rectangle	Add a text rectangle for a graphics layer.
To	Text Ellipse	Add a text ellipse for a graphics layer.



Icon	Name	Description
	Turn On/Off GPS	Turn on or off GPS function.
₽	Tracklog Record	Record GPS tracklog.
(B)	GPS Status	Current GPS status.
1	GPS Position Information	GPS navigation information.
Шф	GPS Debug	GPS signal record.
	GPS Options	GPS settings.
₹	Pan To GPS	Pan the map to GPS position.
A	GPS Navigation Mode	Activate the GPS navigation mode and head to waypoint.



Status Bar tool menu

Icon	Name	Description
	Quick Explorer	Whether to display the quick explorer or not.
	Status Bar	Whether to show status bar or not.

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Toolbar Overview and Browser

	Panning Frame	Whether to show panning frame or not.
(A)	Compass	Whether to show compass or not.
852	Scale Bar	Whether to show scale or not.
	Map Grid	Whether to show the map grid or not.

Add Waypoint tool menu

Icon	Name	Description
P	Add Waypoint	Create a waypoint.
<u>P</u>	Add Waypoint at GPS Position	Add a waypoint at GPS position.
R	Waypoint Manager	Manage waypoints.
Æ	Photo Navigation	Use photos that equipped with coordinates to navigate.
	Export Waypoints	Export all waypoints.
	Import Waypoints	Import waypoint file.

Polyline Measurement tool menu

Icon	Name	Description
<u>~</u>	Polyline Measurement	Draw a polyline to measure distance, area and X, Y coordinates.
~	Freehand Measurement	Draw a freehand line to measure distance, area and X, Y coordinates.
	Rectangle Measurement	Draw a rectangle to measure distance, area and X, Y coordinates.
<u>@</u>	Radial Measurement	Draw a circle to measure distance, area and X, Y coordinates.
	Feature Measurement	Tap on features to get the measurement result.

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8.2 Zoom In Tool Menu

Zoom In

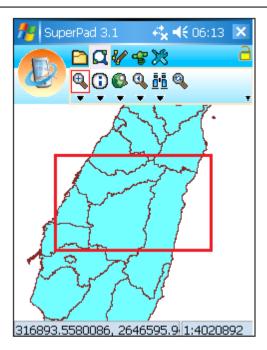


Zoom In

 Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap Zoom In.



2. When the button displays selected status, the function is activated. Then, draw a rectangle to zoom in with stylus (or mouse).

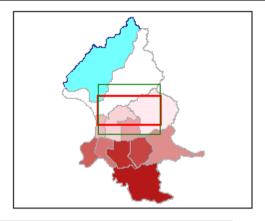


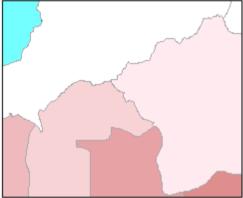
3. The drawn rectangle is zoomed in.



The way to zoom in map by drawing a rectangle gets involved with the map's ratio of width to height. It is of very little chance to have the drawn rectangle's ratio of width to height identical to that of map. Therefore, the system firstly takes the drawn rectangle's width or height as a standard and adjusts the other's ratio to meet the map's ratio of width to height. After the rectangle's ratio of width to height is adjusted identical to that of the map, the system will start to zoom in the adjusted new rectangle.

Please see the figures below. The square of thicker border is the rectangle drawn by user with stylus to zoom in while the square of thinner border is the adjusted square given by system (which is invisible on the map) that has ratio of width to height identical to the map. The figure in the left side, the system takes the width of square of thicker border as the standard and automatically adjusts the height of square of thinner border to make the ratio of width to height identical to that of map. Then, the system will zoom in the square of thinner border in proportion. As a result, the square you want to zoom in will be zoomed in properly without ratio difference.





The function can be used repeatedly. If you want to stop **Zoom In** function, please tap again **Zoom In** button. When the selected status disappears, the function stops.

NOTE: you tap a button to select a function. For example, if the **Zoom In** function is in selected status (which refers to functioned status), the function is activated for use. After you zoom in, the button is still available. Therefore, as you tap the map with stylus again, you still can zoom in the map. If you want to stop the function, please tap again the function button. While the button recovers to non-selected status, the function stops. Therefore, do remember to tap the function button again to stop the function when you have finished the function, preventing the modified map from being adjusted again.

Zoom Out



Zoom Out

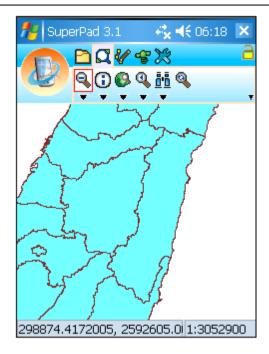
1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the dropdown arrow of **Zoom In** > **Zoom Out**.



2. When the button displays the selected status, the function is activated. Then draw a rectangle on the map where you want to zoom out with stylus.

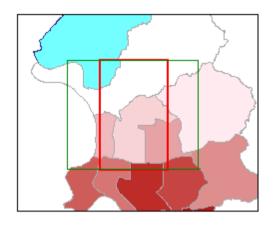


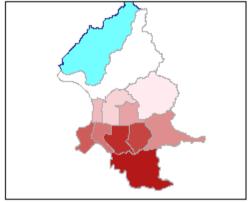
3. The drawn rectangle is zoomed out.



The way to zoom out map by drawing a rectangle gets involved with the map's ratio of width to height. It is of very little chance to have the drawn rectangle's ratio of width to height identical to that of map. Therefore, the system first takes the drawn rectangle's width or height as a standard and adjusts the other's ratio to meet the map's ratio of width to height. After the rectangle's ratio of width to height is adjusted identical to that of the map, the system will start to zoom out the adjusted new rectangle.

Please see the figures below. The square of thicker border is the rectangle drawn by user with stylus to zoom out while the square of thinner border is the adjusted square given by system (which is invisible on the map) that has ratio of width to height identical to the map. The figure in the left, the system takes the height of square of thicker border as the standard and automatically adjusts the width of square of thinner border to make the ratio of width to height identical to that of map. Then, the system will zoom in the square of thinner border in proportion. As a result, the square you want to zoom in will be zoomed in properly without ratio difference.





The function can be used repeatedly. If you want to stop **Zoom Out** function, please tap again **Zoom Out** button. When the selected status disappears, the function stops.

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Pan



Pan

1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the

dropdown arrow of **Zoom In** > **Pan**. Then tap the stylus on the map and drag map to where you want.



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Slide Zoom



Slide Zoom

With touch control mode feature in PDA, this function particularly designed in SuperPad enables you to rapidly slide zoom in or slide zoom out the map by finger touching screen or stylus touching screen at any time while you are moving.

1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the dropdown arrow of **Zoom In** > **Slide Zoom** button on the tool menu.



2. To touch at the position where you want to zoom with your finger or stylus, a red crossed frame appears right at the touch point. Push your finger or stylus upward on the PDA, the map slides zoom out with the red crossed frame as the center. As the stylus or finger leaves the screen, the map begins to redraw.



3. To push your finger or stylus downward on the PDA, the map slides zoom out with the red crossed frame as the center. As the finger or stylus leaves the screen, the map begins to redraw. To stop the function, please tap Slide Zoom button again. For PC version, please hold the mouse left button at the position that you want to slide zoom out, a red crossed frame appears at the mouse's position. Then mouse drag upward to slide zoom out the map with red crossed frame as the center. As you release mouse the map will be redrawn. Or hold the mouse left button and drag downward to slide zoom in the map. After the mouse is released, the system will redraw the map.

NOTE: **Slide Zoom** function can be used with <u>Panning Frame</u> function together to perform zooming and panning together, making the map browsing more effectively and rapidly. After selecting **Slide Zoom** function, please activate <u>Panning Frame</u>. As a result, panning frame shows up on the map. Consequently you can perform slide zoom and panning frame functions together.

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Rotate Map



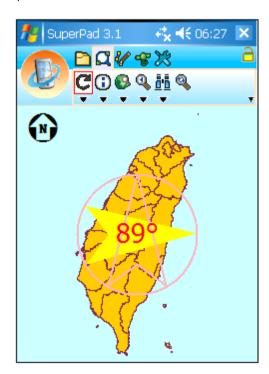
Rotate Map

As you are doing field survey with PDA at hand, you might need to use SuperPad while walking; however the PDA's map takes its top as the north, which might be not the real north. Then, you need to rotate the PDA to target the PDA map's north at the real north to ensure you are heading in correct direction. Consequently, the PDA manipulation becomes very inconvenient. To solve this problem and avoid rotating PDA to target at the real direction, **Rotate map** function is especially designed to help users to adjust the map angle with stylus to target at real direction; thus, you do not need to rotate the PDA with confusion but can accomplish your work more quickly.

1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the dropdown arrow of **Zoom In** > **Rotate Map**.



2. Tap on the map with stylus and rotate, the screen will show as figures below. The pink hollow arrow always points the north of the map, while the yellow arrow can be dragged to rotate direction degree to the desired position. The number in the middle of the yellow arrow shows the rotation degrees. As the stylus leaves the screen, you will see the north of the map turns to the direction where the yellow arrow just has pointed at.



If the compass is set to show on the map, you will find the compass also changes its north to the direction of the yellow arrow. And to stop **Rotate Map** function, please tap again the **Rotate Map** button.



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Clear Rotation



Clear Rotation

After the map is rotated, and you want to recover to the default map direction, taking PDA top as the north, you can tap this function to immediately reset the map rotation degree to zero without rotating to zero by hand.

1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the dropdown arrow of **Zoom In** > **Clear Rotation**.



2. And you will see the rotation degree be reset to zero, back to taking PDA top as the north; if the compass is set to display on the map, the compass direction will also be adjusted back to taking top as north.



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8.3 Identify Tool Menu

Identify



Identify

Identify function allows you to query the feature's attributes. On the map, draw a rectangle with your stylus, and the features covered by this rectangle (including features of different layers) will be shown on the result dialog box. In the dialog box you can find the result features and expand the attribute data. Even more, you can follow the highlight in yellow flash to search the correct position of the feature.

1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap Identify.



2. When the button reveals functioned status, drag a rectangle with stylus or mouse on the map where you want to guery attributes.

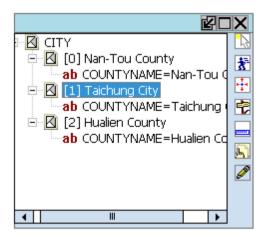


3. The dialog box appears and all the covered features will be listed by layer. The top level is the layer name, and through the icon to the left of layer name you can learn the layer type is point, line or polygon. Firefers that the layer can be expanded to display all features it covers; Firefers that the layer has completely expanded all its features.

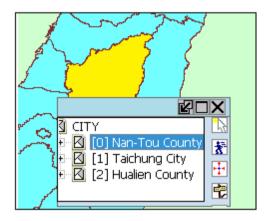


Besides, there are seven buttons in a row on the right side of the dialog box. A feature

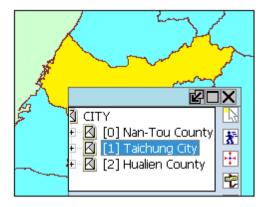
should be selected first, and then the seven buttons can be functioned.



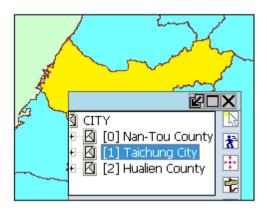
The selected feature is highlighted. After a feature is selected, tap this button and the corresponding feature will be highlighted. Then, you will learn the correct position of the feature.



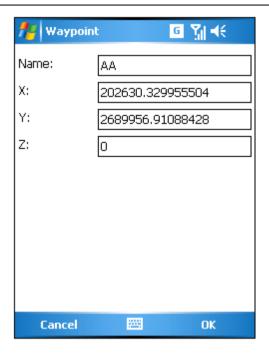
*: Move to feature. After a feature is selected, tap this button and the feature will be zoomed out to the map center and highlighted so that you can learn the feature's position.



Pan to Center. Select a feature and tap this button; the selected feature will be panned to the map center and highlighted, so you can know the position of feature.



Add waypoint. After a feature is selected, tap this button and "Waypoint" dialog box appears. This feature can be set as waypoint and the XY coordinate values will be input automatically in the dialog box or you can input manually.



mes: Measure tool. After a feature is selected, tap this button and the "Measure Result" dialog box appears. The measure result is the same as the result of using Feature Measurement tool, the info includes:

Starting coordinate: the start point's coordinate values of the feature.

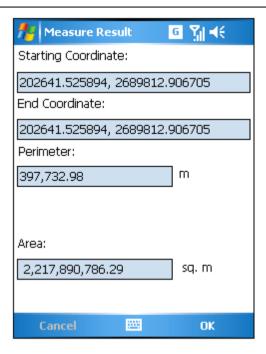
End coordinate: the end point's coordinate values of the feature.

Perimeter: the total distance from the start to end point.

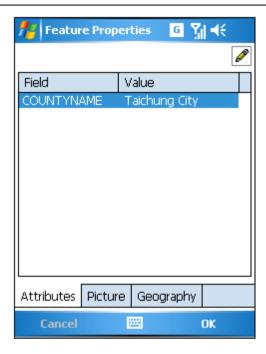
Area: measures the polygon's area.

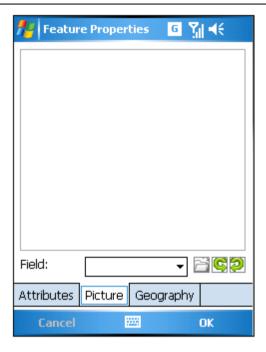
(point, line and polygon have different measure results, please refer to Feature

Measurement.)

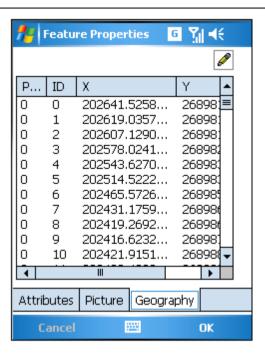


En: Feature Properties. Attributes tab shows the properties of the feature.

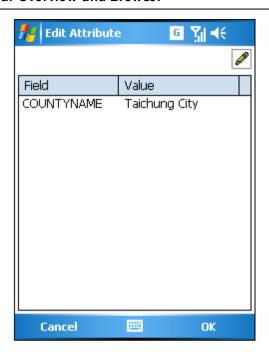




Geography tab displays the coordinates.



☑: edit attribute. Select one feature and tap ☑. The "Edit Attribute" dialog box shows up. Select an attribute and tap ☑ to edit the contents.



NOTE: the pop-up dialog box in SuperPad can be zoomed in or out by dragging the lower right corner with stylus. It is movable by dragging the top of the dialog box, which can avoid the map being covered. Besides, at the upper right corner, tapping the can minimize the dialog box, tapping can close the dialog box, tapping can maximize the dialog to full screen, tapping in the full screen dialog box can zoom out the dialog box, and tapping in the minimized dialog box can zoom in the dialog box. If there is a Name field or other fields like Name, for instance "EnglishName" in the attribute table, the system will use the value of the field to be the name of the feature. If there is no Name field or so, the system will use the value of the first field to be the name of the feature.

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Hyperlink



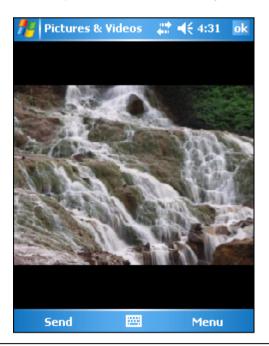
Hyperlink

Hyperlink function enables users to link to the exterior resources or webs, such as files or website so that users can attain the additional information immediately without the need of searching on their own. Also since the linked exterior information is for the current map position, users can have much stronger locale concept and obtain information more rapidly. Besides, the way to open pictures in picture layers applies hyperlink function as well.

1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the dropdown arrow of **Identify** > **Hyperlink**.



2. Tap the feature with hyperlink on the map with stylus (or mouse) and the exterior file or web opens on the screen directly.



NOTE: if you want to activate hyperlink to connect the exterior resources, such as files or web, you should create the file path or web address in the attribute fields when creating a new layer. Consequently go to Layer Manager>Layer Properties>**Hyperlink** to assign the field to hyperlink so that the system can guide to the file or web.

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8.4 Zoom to Full Extent Tool Menu

Zoom to Full Extent



Zoom to Full Extent

1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap **Zoom to Full Extent**.



2. And you will see the map is zoomed to the extent covering all features of all layers.



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Zoom to Layer



Zoom to Layer

 Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the dropdown arrow of **Zoom To Layer** > **Zoom to Layer**, and the list of all layers will show up on the right side, tap the layer that you want to go and you will see the map is zoomed to cover all extent of the selected layer.



NOTE: if you have zoomed to the selected layer but cannot see the layer, please check if the layer is set invisible in Layer Manager. All layers will be listed on Zoom to Layer list. Therefore, even if the layer is set invisible, it is still listed; however, since the layer is set invisible, it is invisible on the map. In such case, please go to Layer Manager and set the layer visible then select Zoom To Layer and you will see the layer.

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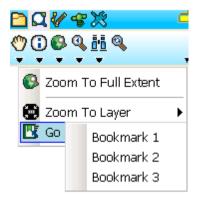
Go to Bookmark



Go to Bookmark

The function is able to be used when the bookmarks are built up already. If there is no bookmark at all, the function presents unusable status.

Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the
dropdown arrow of Zoom to Full Extent > Go To Bookmark, and the list of all
bookmarks will be expanded to the right side. Directly tap the bookmark that you
want to go with stylus (or mouse). And the map will move to the recorded bookmark
boundaries.



NOTE: Bookmarks will not be saved in the system after you exit, you need to reset bookmark for each time using SuperPad.

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8.5 Go Back to Previous Extent

Go Back to Previous Extent



Go Back to Previous Extent

1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap **Go Back To Previous Extent** and the map will go back to previous extent



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Go to Next Extent



Go to Next Extent

After Go Back To Previous Extent is applied and you want to go back to the original extent, Go To Next Extent can be used.

 Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap the dropdown arrow of <u>Go Back To Previous Extent</u> > Go To Next Extent and the map will go to the next extent.



NOTE: <u>Go Back to Previous Extent</u> and **Go to Next Extent**, in fact, do not undo or redo layer contents but simply alter the map display. On the one side, this tool allows users to easily browse the map that you have viewed without the need of repeatedly zooming or panning. On the other side, the tool is for viewing only not for file modification. If you have modified the file by using Edit toolbar and want to undo the editing, please use the undo function provided by <u>Smart Editing Bar</u> instead. Moreover, the <u>Smart Editing Bar</u> is only able to use when the map is in editing mode.

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8.6 Find Tool Menu

Find

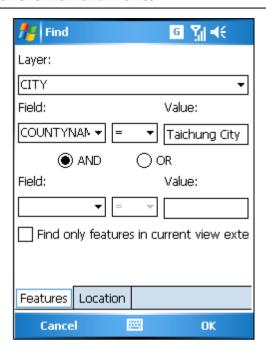


Find

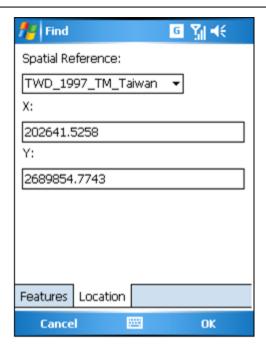
1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar, and tap **Find**



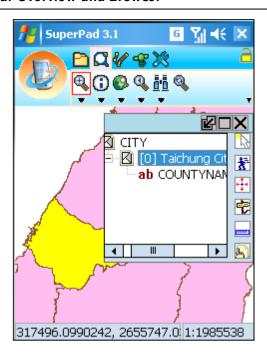
2. "Find" dialog box shows up. Choose the layer to query in Layer. For the layers which are set invisible can still be queried. Next, select the field and value to find in Field and Value using SQL syntax. If you check "Find only features in current view extent", it only finds features on the current map window. After that, tap OK.



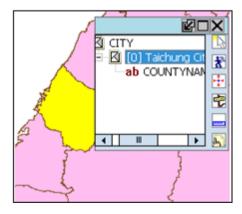
You can also find features by setting the GPS coordinates in Location tab. You can find the features by assigning coordinate system and XY coordinates.



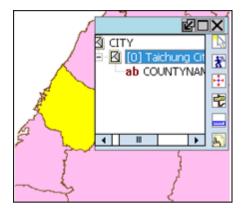
3. There are seven buttons in the row on the right side of the result dialog box. A feature should be selected first, and then the seven buttons can function.



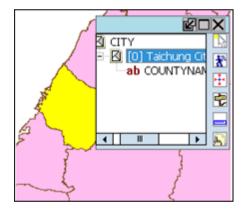
The selected feature is highlighted. After a feature is selected, tap this button and the feature will be highlighted on the map. Thus, you will learn the position of the feature.



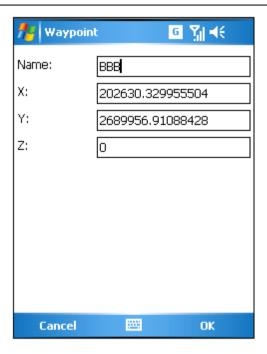
* : Move to feature. After a feature is selected, tap this button and the feature will be zoomed out to the map center and highlighted. Therefore, you can learn the feature's position.



Pan to Center. Select a feature and tap this button; the selected feature will be panned to the map center and highlighted, so you can know the position of feature.



Add waypoint. After a feature is selected, tap this button and "Waypoint" dialog box appears. This feature can be set as a waypoint, the X, Y coordinate values will be input in the dialog box automatically or you can input manually.



"":Measure tool. After a feature is selected, tap this button and the "Measure Result" dialog box appears. The measure result is the same as the result of using Feature Measurement tool, the info includes:

Starting coordinate: the start point's coordinate values of the feature.

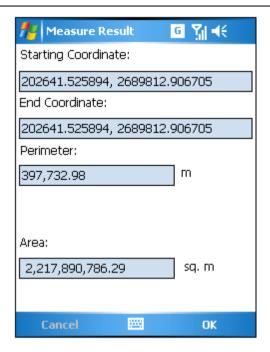
End coordinate: the end point's coordinate values of the feature.

Perimeter: the total distance from the start to end point.

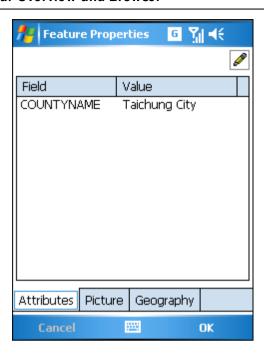
Area: measures the polygon's area.

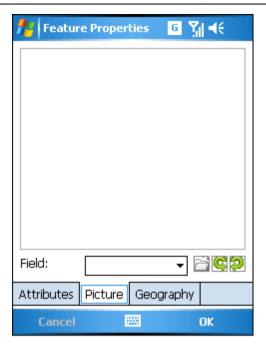
(point, line and polygon have different measure results, please refer to Feature

Measurement.)

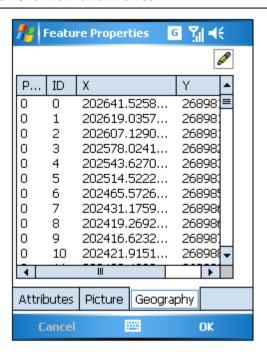


▶: Feature Properties. Feature properties are shown and you can select to edit.





Geography tab displays the coordinates.



☑: Edit attribute. Select one feature and tap ☑. The Edit Attribute dialog box shows up. Select an attribute and tap ☑ to edit the contents.



NOTE: **Find** and **Identify** tools allow you to query the feature's attribute data. You can choose one of the two methods according to the information you already knew and the need since there is some discrepancy between the two tools. If you learn precisely the attribute data but don't know where the feature's located, **Find** is suggested to be used to search through setting the filtering condition. However, if you only know the feature's position on the map, you can use **Identify** to view its attribute data by directly dragging a rectangle.

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Create Bookmark

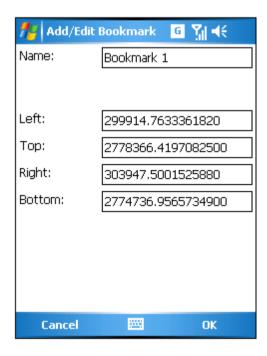


Create Bookmark

 Tap the Explorer button on the main toolbar, switch to Explorer toolbar,tap the dropdown arrow of <u>Find</u> > Create Bookmark.



2. "Add/Edit Bookmark" dialog box shows up. Give a name for the bookmark in Name field, and you will see in the dialog box the left and top and right and bottom boundary values of the map are input automatically by the system. If you want to reset the boundary, please directly change the values. After the settings are finished, tap OK to close the dialog box. In "Bookmark Manager" dialog box this bookmark will be listed.



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Bookmark Manager

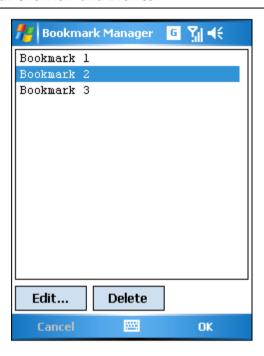


Bookmark Manager

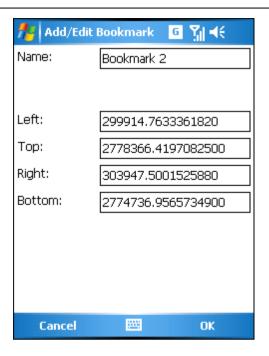
1. Tap the Explorer button on the main toolbar, switch to Explorer toolbar,tap the dropdown arrow of Find > Bookmark Manager.



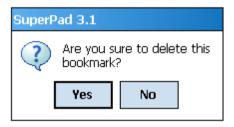
2. The "Bookmark Manager" dialog box shows up. All the bookmarks will be listed in the dialog box, and you can delete or edit the bookmarks.



3. Select the bookmark that you want to adjust by tapping, and tap the **Edit** button, the "Add/Edit Bookmark" dialog box shows up. You can modify boundary values or change the name of the bookmark. After the settings are finished, tap **OK** and back to the "Bookmark Manager" dialog box.



4. If you want to delete bookmarks, please select the bookmark first and tap the **Delete** button, and query message shows up. If you are sure to delete the bookmark, tap **Yes**; if not, tap **No**.



NOTE: The bookmark is to record the map extent only. Next time you start SuperPad, you should create new bookmark.

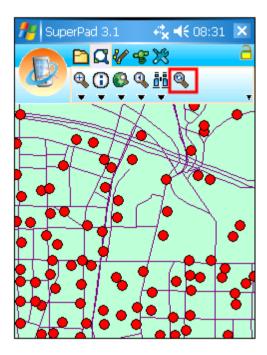
8.7 Refresh



Refresh

Refresh can redraw the map; any changes on map or resetting of layer properties can trigger the map to redraw. Whenever SuperPad is drawing a map, tapping on any part of the screen with stylus (or mouse) will stop the drawing, which allows you to do other behaviors and saves the drawing time. To continue to redraw the map, just tap **Refresh**.

Tap the Explorer button on the main toolbar, switch to Explorer toolbar, tap Refresh.



Chapter



9 Editing Features

9.1 Editing Tools Overview



Editing Tools Overview

Before editing features, the layer you want to edit should be set editable, and the various editing tools can be used. Editing features can be divided into two parts: editing existing features and creating features.

Editing Existing Features: the feature that you want to edit should be selected by **Select Feature** function first. After the feature is selected, choose a needed function from the various editing tools, such as moving, offsetting or deleting feature or vertex. **Creating Features:** creating features function adds new features of point, line and polygon on the map. Moreover, the attributes and geography can be edited as well.

The editing is functioned by using the various tools to work the corresponding functions. For example, when a feature is to be edited, **Selec Feature** tool should be selected and used to do the selection. Consequently, editing tools should be selected and used to edit the feature or vertex (line or polygon layer). As a result, before you start to edit, select a tool first. Following, we are giving you an overview on editing tools.

Select Feature tool menu: through this tool menu, the feature you want to edit can be selected or you can cancel the selection; to PDA equipped with GPS function, features at the GPS position can be selected or the map can be zoomed to the selected feature's extent for better viewing.

Icon	Name	Description
•	Select Feature	Select a feature to edit.
&	Select at GPS Position	Select a feature at GPS position.
*	Clear Edit Selection	Clear the edit selection.
6	Zoom to Selected Feature	Zoom the selected feature to the map center.
®	Move to Selected	Move the selected feature to the map center.

	Feature	
포	Repeated Attribute	Repeat the attributes of the last created feature.

Vertex Edit tool menu: through these editing tools, moving, inserting and deleting vertex can be done. Besides, continuing to sketch vertices of a line can be done with the tool menu.

Icon	Name	Description
K	Vertex Edit	Edit the feature's vertices.
H	Move Vertex	Move the vertex.
A	Insert Vertex	Insert a new vertex into the feature.
	Segment Polyline	Continue to digital new vertices behind the last vertex.

Point tool menu: you can create different types of features, such as point, line and polygon.

- (1) Point: Create a point feature.
- (2) Line: Create line features by line, polyline and freehand line functions.
- (3) Polygon: Create polygon features by rectangle, polygon, ellipse, circle and freehand polygon functions.

Icon	Name	Description
•	Point	Create a point feature (for point layer).
\	Line	Create a line, a line feature (for line layer).
W	Polyline	Create a polyline, a polyline feature (for line layer).
مح	Freehand Line	Create a freehand line, a line feature (for line layer).
0	Polygon	Create a polygon, a polygon feature (for polygon layer).
	Rectangle	Draw a rectangle to create a polygon feature (for polygon layer).
0	Circle	Draw a circle to create a polygon feature (for

Editing Features

		polygon layer).
0	Ellipse	Draw an ellipse to create a polygon feature (for polygon layer).
۵	Freehand Polygon	Draw a freehand polygon to create a polygon feature (for polygon layer).

Feature Properties tool menu: You can edit feature properties and move, rotate, offset, scale, resize and delete the features.

Icon	Name	Description
8	Feature Properties	Edit or modify attribute data.
0.5	Move Feature	Move the feature.
&	Rotate Feature	Rotate the feature.
So.	Offset Feature	Offset the feature.
20 E	Scale Feature	Scale feature with the feature center as the standard.
5 5	Resize Feature	Resize the width or height of feature.
%	Delete Feature	Delete the feature.

Text Point tool menu: it provides the tools to edit the features for the graphics layer.

Icon	Name	Description
T.	Text Point	Add a text point for a graphics layer.
T _v	Text Polyline	Add a text polyline for a graphics layer.
To	Text Polygon	Add a text polygon for a graphics layer.
T	Text Rectangle	Add a text rectangle for a graphics layer.
To	Text Ellipse	Add a text ellipse for a graphics layer.

Capture Point Using GPS tool menu: when GPS is activated, features can be created at the GPS position.

%	Capture Point Using GPS	Add a point feature at GPS position.
34	Add GPS Vertex	Add a new vertex using GPS.
3%	Add GPS Vertices Continuously	Add vertices continuously using GPS.

NOTE: some tools are usable only under some specific conditions. For example, the GPS related tools can be usable only if GPS is activated. A usable tool presents in full colors; on the contrary, an unusable tool presents in gray color.

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9.2 Editing Existing Features



Editing Existing Features

First we will introduce how to edit the existing features on the map. The features might be generated long time ago or with some mistakes, so they need to be modified.

In editing, first you should ensure the layer you want to edit is set editable in <u>Layer Manager</u>. This is because <u>Select Feature</u>, and <u>Feature Properties</u> tools can only be usable when target layer is in editable status. Moreover, only one layer of a type is able to be set editable, which means if you have three point layers to edit, you should edit one layer one time. However, you can edit one point layer, one line layer and one polygon layer together.

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Select Feature Tool Menu

Select Feature

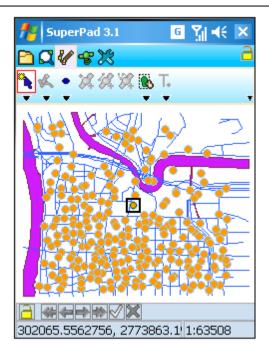


Select Feature

1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap **Select Feature**.



After the function is activated, directly tap the feature that you want to edit on the map with stylus (or mouse). Then, the selected feature will be marked in frame. Then, you can select editing tools to edit the features.



Setting layer visibility helps selecting the editing feature. If a layer is set invisible, the features of the layer are not to be displayed on the map. That means the minor layers can be hidden temporarily and you can select and edit the features among fewer options to obtain a better result.

NOTE: how do I know if any feature is selected? There are two ways to check. Firstly, a selected feature will be marked in frame. Second, if the feature is located within invisible extent, please check the Vertex_Edit button on the toolbar to see if it is in usable status. If yes, it means a feature is selected; for point layer (it has no vertex)

Move Feature, Delete Feature and Offset Feature on the Vertex Edit tool menu will be in usable status.

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Select at GPS Position

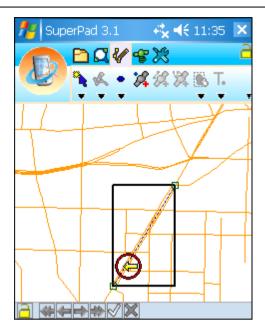


Select at GPS Position

- 1. First connect GPS with your mobile device or ensure mobile device's GPS settings.
- 2. Tap the GPS button on the main toolbar, switch to GPS toolbar and tap <u>Turn On</u> GPS.
- 3. When you begin to select features to edit using GPS, please switch to Edit toolbar, tap the dropdown arrow of **Select Feature** > **Select at GPS Position**.



4. While you are tapping **Select at GPS Position** button, the feature at the current GPS position will be selected. After the feature is selected successfully, the selected feature will be marked.



NOTE: **Select at GPS Position** function selects features according to the current GPS position. Please make sure there is an editable layer on the map. If there is no editable feature at the current position, no feature will be selected.

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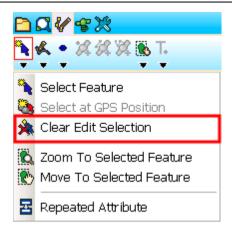
Clear Edit Selection



Clear Edit Selection

If you want to clear selection, tap Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of <u>Select Feature</u> > Clear Edit Selection. As a result, the selected mark disappears.

Editing Features



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Zoom to Selected Feature

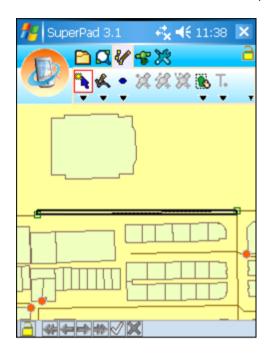


Zoom to Selected Feature

 Tap Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of Select Feature > Zoom To Selected Feature.



2. The selected feature is zoomed to the map center.



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Move to Selected Feature



Move to Selected Feature

1. Tap Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of <u>Select Feature</u> > **Move To Selected Feature**.

Editing Features



2. The selected feature is moved to the map center.



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Repeated Attribute



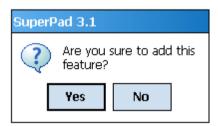
Repeated Attribute

As one feature is newly created, this function can be used to create another new feature with the same attributes, sparing the attribute editing time.

1. As a new feature is created and its attribute is also built up, tap **OK** and go back to the map. Then tap the **Repeated Attribute** function.



2. After that, tap the position where you want to add a new feature, and a confirm message shows up. Tap **Yes**.



3. The edit attribute dialog of the feature will not show up, but the new feature will be

directly added on the map with the same attributes as the previous created feature.



NOTE: **Repeated Attribute** is only for "repeat the attribute of previously added new feature to the next new feature "; that is to say, the previous feature and the current editing feature should be new features on the map. If either of them is the existing feature on the map, you will find the function does not work.

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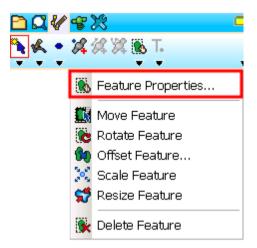
Feature Properties Tool Menu

Feature Properties

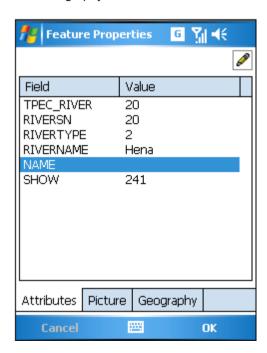


Feature Properties

- 1. Select the feature that you want to edit with the selection method mentioned above.
- Tap Edit tool on the main toolbar and switch to the Edit toolbar, tap Feature Properties.

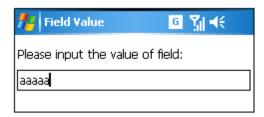


3. "Feature Properties" dialog box shows up. There are three tabs: Attributes, Picture and Geography. Select an attribute and edit it.

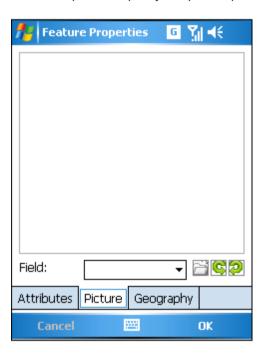


4. "Field Value" dialog box shows up and change the value.

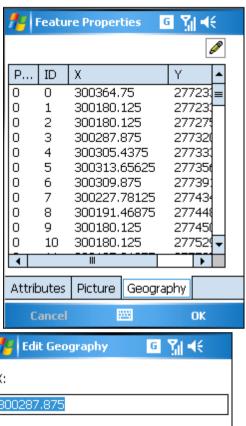
Editing Features



5. In the Picture tab, if the feature has hyperlink picture, you can assign the hyperlink field and tap at to specify the picture path. Tapping acan rotate the picture.



6. In Geography tab, select a vertex and you can edit the geography.



X: 300287.875 Y: 2773206.75

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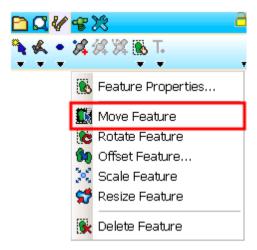
Move Feature



Move Feature

- 1. Select the feature that you want to edit.
- 2. Tap the dropdown arrow of Feature PropertiesFeature Properties > Move

Feature.



3. Then drag the selected feature to the desired new position with stylus, and you will find that the feature is moved to new position.



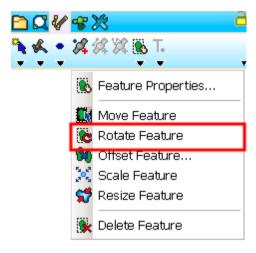
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Rotate Feature

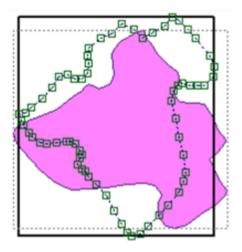


Rotate Feature

- 1. Select the feature that you want to edit.
- 2. Tap the dropdown arrow of **Feature Properties** > **Rotate Feature**.



3. The selected feature comes in editing mode, then you can rotate the feature to the desired position with stylus (or mouse) then release. The rotated feature will be marked in black frame.



4. Tap Write In of the Smart Editing Bar to save the edit.

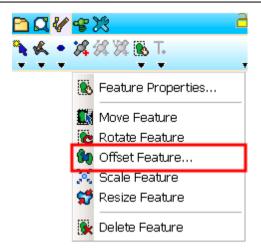
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Offset Feature

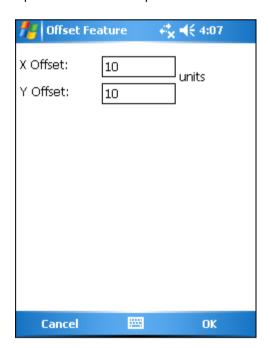


Offset Feature

- 1. Select the feature that you want to edit.
- 2. Tap the dropdown arrow of Feature Properties > Offset Feature.



3. An "Offset Feature" dialog box shows up, input the desired X and Y offset unit and tap **OK** back to the map. The feature will be offset to the new position.



NOTE: "Units" refers to the same unit in **Extent** tab of **Map Properties**.

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Scale Feature



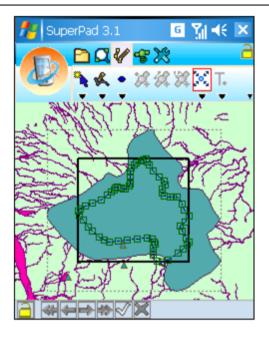
Scale Feature

The function can scale the editing feature proportionally with feature center as the standard by dragging stylus or mouse.

- 1. Select the feature you want to edit.
- 2. Tap the dropdown arrow of the **Feature Properties** > **Scale Feature**.

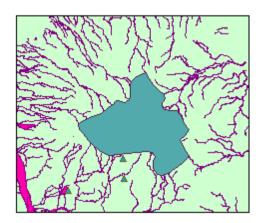


3. Drag the rectangle that surrounds the selected feature by stylus or mouse to zoom in or zoom out the feature with the original feature's center as the standard. If the rectangle is dragged closer to the feature's center, the feature will be zoomed out more; if the rectangle is dragged farther to the feature's center, the feature will be zoomed in more. As the stylus or mouse is released, a new feature is obtained. See the figure below, the original feature is displayed as a feature, while the scaled feature is displayed with the vertices.



- 4. After the feature is scaled, tap Write In of the Smart Editing

 Bar to save the edit.
- 5. After the data is saved, the feature on the map is zoomed out proportionally.



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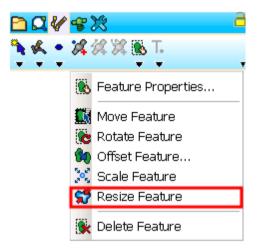
Resize Feature



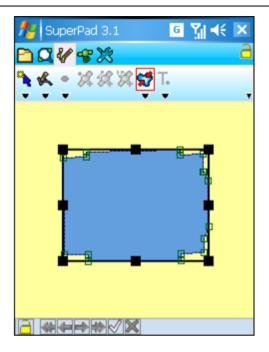
Resize Feature

Resize Feature and <u>Scale Feature</u> are both to adjust the size of editing feature, while the difference is that **Resize Feature** is to resize the width or height of feature as user's need, which is more flexible than proportionally scaling of <u>Scale Feature</u> function.

- 1. Select the feature you want to edit.
- 2. Tap the dropdown arrow of Feature Properties > Resize Feature.

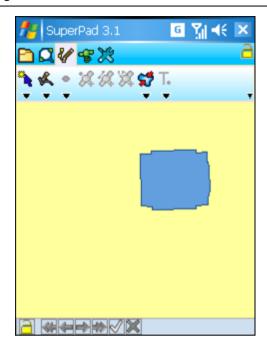


3. The selected feature will be displayed with eight small black squares and you can drag any of the eight black squares to resize the feature.



- 4. After the feature is resized, tap Write In of the Smart Editing Bar to save the edit.
- 5. After the editing is saved, the feature is zoomed out on the map.

Editing Features



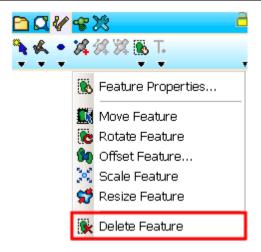
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Delete Feature

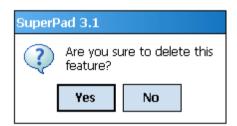


Delete Feature

- 1. Select the feature that you want to edit.
- 2. Tap the dropdown arrow of **Feature Properties** > **Delete Feature**.



3. Message box shows up. If you are sure to delete, tap **Yes**; if not, tap **No**. If you tap **Yes**, the feature will be deleted.



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Vertex Edit Tool Menu

Vertex Edit



Vertex Edit

- 1. Select the feature that you want to edit.
- 2. Tap **Zoom To Selected Feature** and the feature is zoomed to the map center. Tap

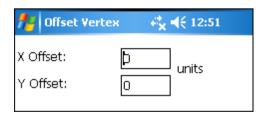
Vertex Edit.

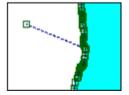


3. All vertices of the feature are presented in frames. When you tap any vertex, it will be marked in red frame and a pop-up menu shows up for you to select **Offset...**, **Move to. Move To GPS** or **Delete**.



4. Tap **Offset** and **Offset Vertex** dialog box shows up. Input the X and Y offset unit, tap **OK** back to the map. The vertex is moved to new position.

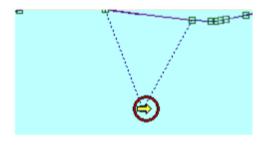




If you tap Move to..., "Move Vertex" dialog box shows up, input the new position to move.



- 6. If you want to delete a vertex, tap **Delete** and the vertex will be deleted immediately.
- 7. Tap Write In of the Smart Editing Bar to save the edit.
- 8. If you want to move the vertex to GPS, activate GPS, tap Move to GPS.
- 9. Then the vertex will move to the current GPS position.
- 10.To confirm the edit, please tap and the vertex moves to the GPS location.



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Move Vertex

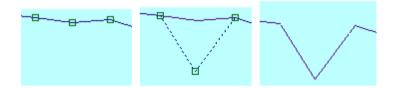


Move Vertex

- 1. Select the feature that you want to edit.
- 2. Tap the dropdown arrow of Vertex Edit > Move Vertex.



3. The selected feature comes in vertex editing status. Drag the vertex that you want to move to the new position with stylus (or mouse). When the stylus leaves screen (or release mouse), the vertex is moved to the new position and the shape of the feature is changed as well.



4. Tap Write In of the Smart Editing Bar to save the edit.

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Insert Vertex



Insert Vertex

- 1. Select the feature that you want to edit.
- 2. Tap the dropdown arrow of Vertex Edit > Insert Vertex.



3. Tap at the position where you want to insert a vertex with stylus (or mouse), and a vertex is inserted right at the position.



4. Tap Write In of the Smart Editing Bar to save the edit.

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Segment Polyline (for line layer only)

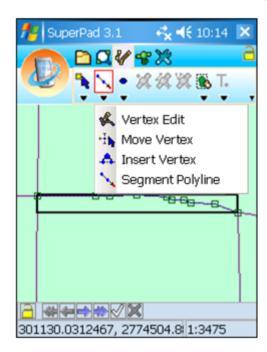


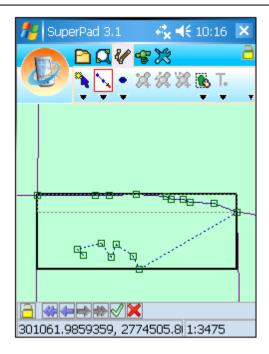
Segment Polyline (for line layer only)

- 1. Select the feature that you want to edit.
- 2. Tap the dropdown arrow of Vertex Edit > Segment Polyline.



3. The selected feature comes in editing mode. Tap at the position where you want to add a vertex and a vertex will be sketched to link to the last vertex of the feature. More vertices can be sketched continuously.





4. Tap Write In of the Smart Editing Bar to save the edit.

NOTE: you can implement several edits using <u>Undo</u> →, <u>Redo</u> →, <u>Continuously Undo</u> → or <u>Continuously Redo</u> → on <u>Smart Editing Bar</u> to help you edits. At last, when you are sure to write in the edits, tap ✓ to redraw; if not, tap × to cancel.

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9.3 Creating Features on Layer

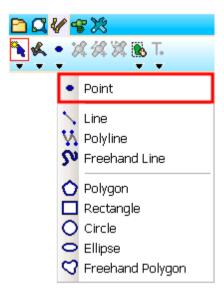
Point



Point

To create a point feature, you should ensure a point layer is editable.

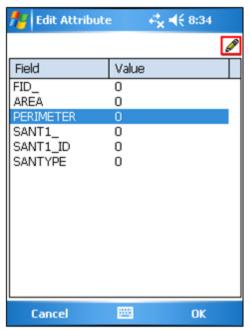
1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap **Point**. After the **Point** button displays enabled, you can tap the position on the map where you want to create a new feature.

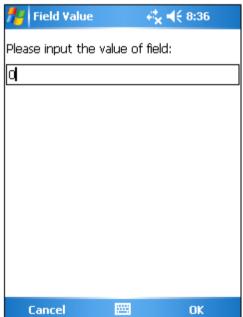


2. Then message box shows up, if you are sure to add this feature, tap **Yes** to create a new feature; if not tap **No**.



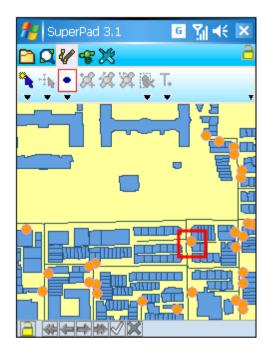
3. "Edit Attribute" dialog box shows up. You can input the attribute data. Select the field to edit and tap
to enter the "Field Value" and edit.





4. After the attribute is accomplished, tap OK. And the newly added point feature is

displayed on the map. After the point feature is created, you can continue to add more point features. If you want to stop the function, tap again the **Point** button.



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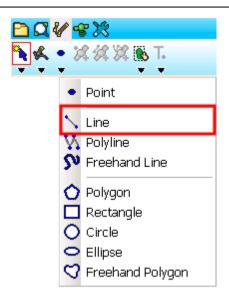
Line



Line

To create a line feature, you should ensure a line layer is editable.

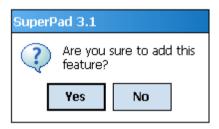
1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of **Point** > **Line**.



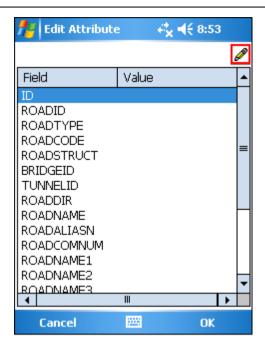
2. After the **Line** button displays selected status, tap the start and end points of the line you want to create on the map. The first point you tap on the screen is the start point, and the second point is the end point of the line. Later, the system will automatically link the two points to become one line.



3. Message box shows up. If you are sure to add the feature, tap Yes; if not, tap No.



4. "Edit Attribute" dialog box shows up, in which you can create the attribute data. Then tap ${\bf OK}$.



5. Later, you will find the line is added to the map.



6. You can continue to create more lines; if you want to stop the function, tap **Line** button again and the function stops.

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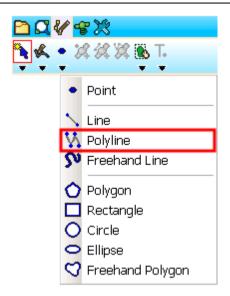
Polyline



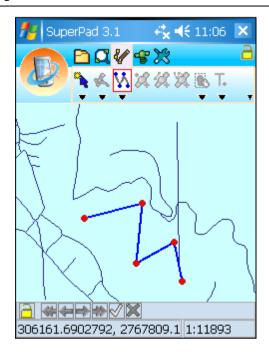
Polyline

To create a polyline feature, you should ensure a line layer is editable.

1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of Point > Polyline.



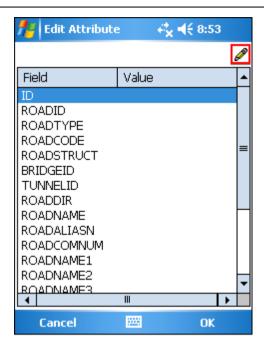
2. After the **Polyline** button displays selected status, continuously tap on the map where you want to place turn points for the new polyline. After the second turn point is placed, a line appears to connect between the first and second point. After the last point is done, tap **Polyline** button again to accomplish the creation of feature.



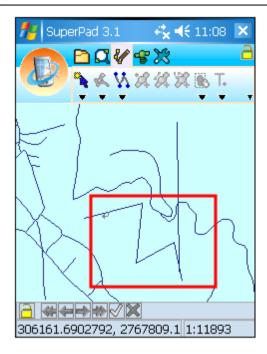
3. Message box shows up. If you are sure to add this feature, tap Yes; if not, tap No.



4. "Edit Attribute" dialog box shows up, in which you can create the attribute data of the features. Then tap **OK**.



5. You will find the polyline is added to the map.



6. After that, you can continue to add more polyline features. If you want to stop the function, tap again the **Polyline** button.

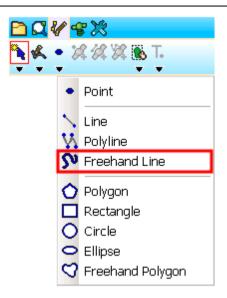
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Freehand Line

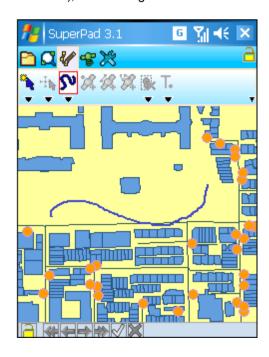


Freehand Line

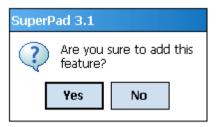
1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of **Point** > **Freehand Line**.



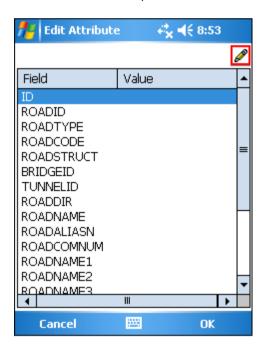
2. As **Freehand Line** button displays selected status, directly drag and draw the line with stylus (or mouse) as you want. As the stylus leaves screen (or mouse releases), the drawing is finished.



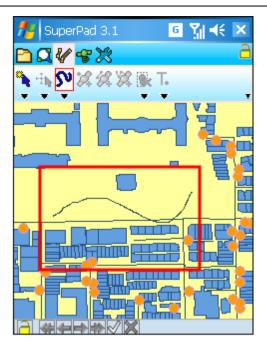
3. Message box shows up. If you are sure to add the feature, tap Yes; if not, tap No.



4. "Edit Attribute" dialog box shows up, in which the attribute data of the new feature can be edited. Then tap **OK**.



5. You will find the freehand line is already added to the map.



6. Then you can continuously add more freehand lines. If you want to stop the function, tap the **Freehand Line** button and the function stops.

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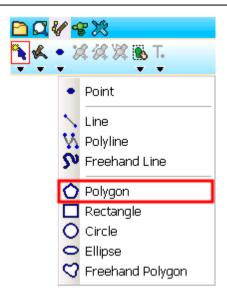
Polygon



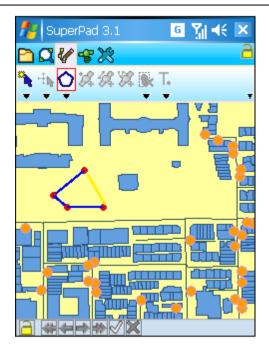
Polygon

To create a polygon feature, you should ensure a polygon layer is editable.

1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of Point > Polygon.



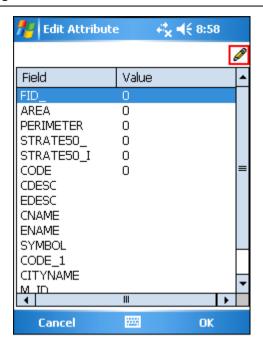
2. After the **Polygon** button displays selected status, tap where you want to place turn points for the new polygon feature on the map with stylus, which are the vertices of the polygon. It is unnecessary to link the start and end points on your own because SuperPad will automatically link the start and end points to accomplish the polygon. After the vertices are well placed, tap **Polygon** button again to finish the drawing. Then, SuperPad automatically links the start and end points to become a complete polygon.



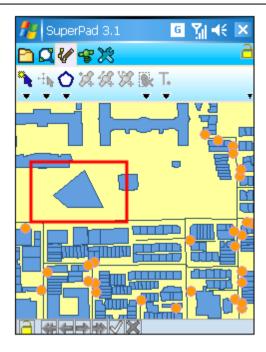
3. Message box shows up. If you are sure to add the feature, tap Yes; if not, tap No.



4. "Edit Attribute" dialog box shows up, in which you can create the attribute data. After the data is set up, tap **OK**.



5. Back to the map, you will find the polygon is added to the map.



6. The **Polygon** function also stops. So, if you want to create more polygon features, please tap **Polygon** button again.

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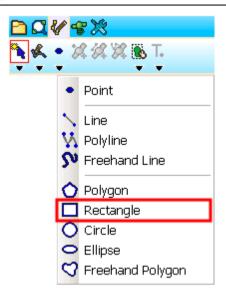
Rectangle



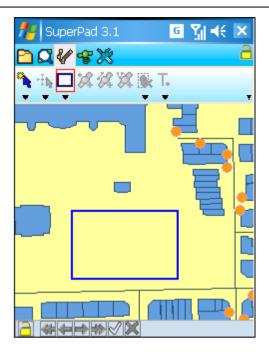
Rectangle

To create a rectangle feature, you should ensure a polygon layer is editable.

1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of Point > Rectangle.



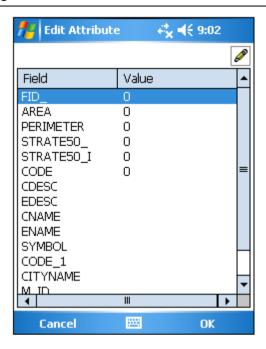
2. After the **Rectangle** button displays selected status, drag a needed rectangle on the map with stylus (or mouse holds left button). The start point is the point where the stylus touches the screen, while the end point is the point where the stylus leaves (or mouse releases). After the stylus leaves the screen (or mouse releases left button), the drawing is finished.



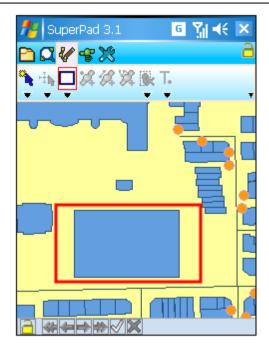
3. Message box shows up. If you are sure to add the feature, tap Yes; if not, tap No.



4. "Edit Attribute" dialog box shows up, in which, you can create the attribute data for the new feature. After attribute data is accomplished, tap **OK**.



5. You will find the rectangle is added to the map. And you can continue to add more rectangle features.



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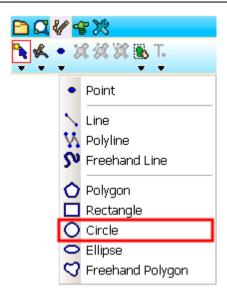
Circle



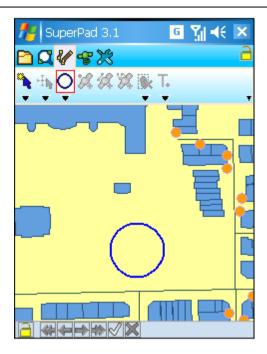
Circle

To create a circle on the map, you should ensure a polygon layer is editable, and the **Circle** button presents usable status in full colors. With **Circle** tool, you can draw a circle feature as needed.

1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of Point > Circle.



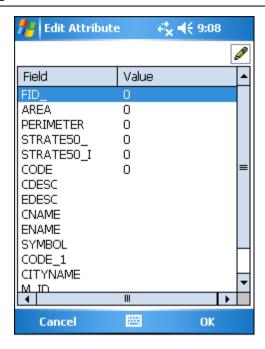
2. After the **Circle** button displays selected status, drag a needed circle with stylus (or hold mouse left button). The start point is the point where the stylus touches the screen and the end point is the point stylus leaves screen. The center of the circle is right the start point.



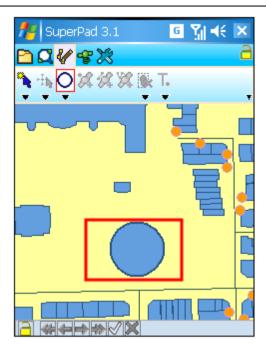
3. Message box shows up. If you are sure to add the feature, tap Yes; if not, tap No.



4. "Edit Attribute" dialog box shows up, in which you can create the attribute data for the new feature. After attribute data is accomplished, tap **OK**.



5. You will find the circle is added to the map.



6. Then you can continue to add more circle features. If you want to stop the function, tap **Circle** button again and the function stops.

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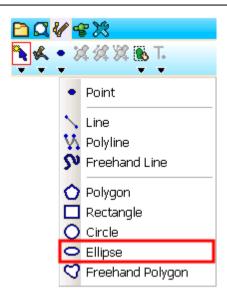
Ellipse



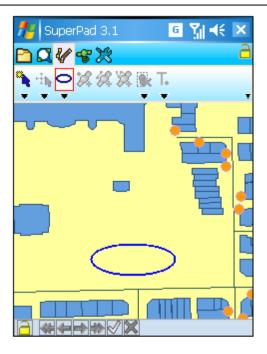
Ellipse

To create an ellipse, you should ensure a polygon layer is editable.

1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap the dropdown arrow of Point > Ellipse.



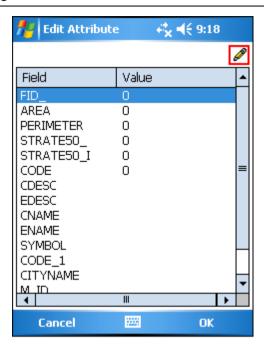
2. After the Ellipse button displays selected status, drag a needed ellipse with stylus (or hold mouse left button). The start point is the point where the stylus touches the screen and the end point is the point where stylus leaves the screen. When your stylus leaves (or mouse releases left button), the drawing is finished. The center of the ellipse is right the start point.



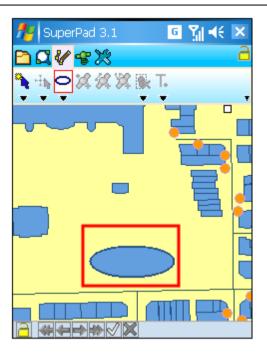
3. Message box shows up. If you are sure to add the feature, tap Yes; if not, tap No.



4. "Edit Attribute" dialog box shows up, in which you can create the attribute data for the new feature. After attribute data is accomplished, tap **OK**.



5. You will find the ellipse is added to the map.



6. After that, you can continue to add more ellipse features. If you want to stop the function, tap **Ellipse** button again and the function stops.

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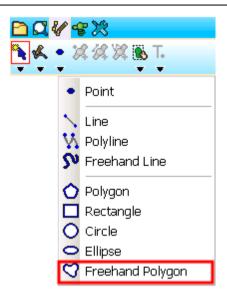
Freehand Polygon



Freehand Polygon

To create a freehand polygon, you should ensure a polygon layer is editable.

1. Tap the Edit button on the main toolbar, switch to Edit toolbar; tap the downward arrow of Point > Freehand Polygon.



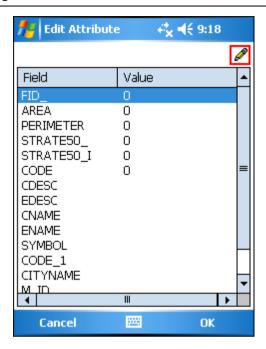
2. After the Freehand Polygon button displays selected status, you can draw a needed polygon on the map with stylus (or mouse left button). When the stylus leaves the screen (or mouse releases), the drawing is finished. It is unnecessary to link the start and end points on your own. SuperPad automatically links them together to accomplish the drawing.



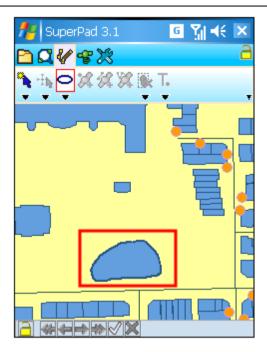
3. Message box shows up. If you are sure to add the feature, tap Yes; if not, tap No.



4. "Edit Attribute" dialog box shows up, in which you can create the attribute data for the new feature. After attribute data is accomplished, tap **OK**.



5. You will find the freehand polygon is added to the map.



6. After that, you can continue to add more freehand polygon features. If you want to stop the function, tap the **Freehand Polygon** button again and the function stops.

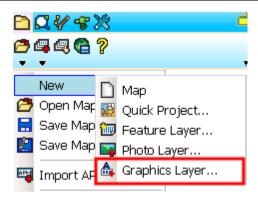
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Graphics Layer

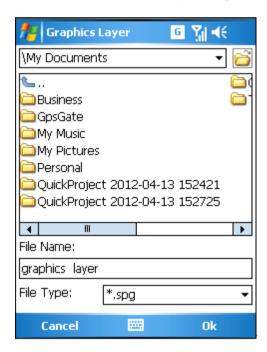


Graphics Layer

1. First, create a new graphics layer. Tap Map/Layer toolbar, tap dropdown arrow of **Open Map > New > Graphics Layer**.



2. "Graphics Layer" dialog box opens. Set up the filename and path. The file type is SPG. Then start to edit Graphics Layer.



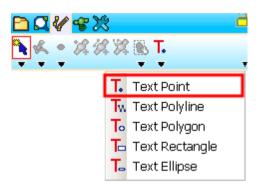
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Text Point



Text Point

1. To add text point, firstly switch to the Edit toolbar and select **Text Point**.

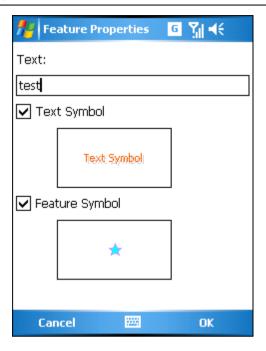


2. Tap the location on the map where you want to add the text point, and the query dialog box opens and tap **Yes** to add the text point.

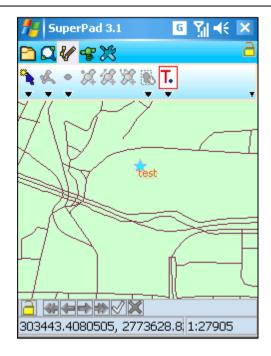


3. As the "Feature Properties" dialog box opens, enter the text to show in Text field. Check Text Symbol and Feature Symbol to set up the font of text and the style of the symbol. When the settings are finished, click **OK**.

Editing Features



4. Go back to the map, the text point is added to the map. You can add multiple text points and set the points with different styles.



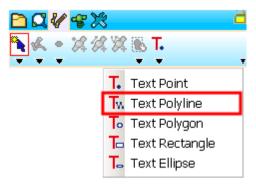
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Text Polyline

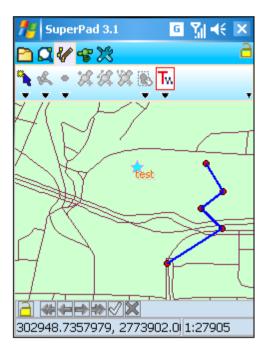


Text Polyline

1. To add text polyline, firstly switch to the Edit toolbar, tap the dropdown arrow of **Text Point > Text Polyline**.



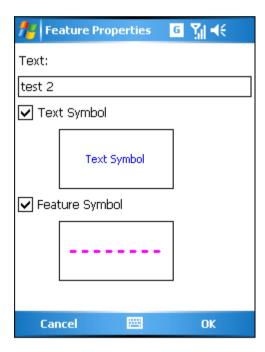
2. Create the polyline by tapping with stylus (or mouse) on the map with several turning points which will be the vertices of the polyline. When the stylus taps the second turning point, a segment appears to connect the first point and the second turning point, and so forth. At last when the end point of the polyline is tapped, click **Text Polyline** again to finish the edit.



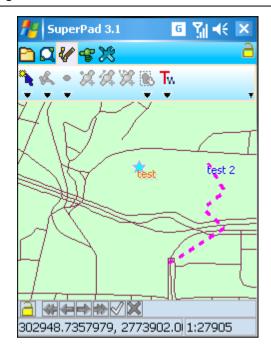
3. As the query dialog box appears, please click **Yes** to add the text polyline.



4. As the "Feature Properties" dialog box opens, enter the text to show in Text field. Check Text Symbol and Feature Symbol to set up the font of text and the style of the symbol. When the settings are finished, click **OK**.



5. Go back to the map, and the text polyline is added to the map.



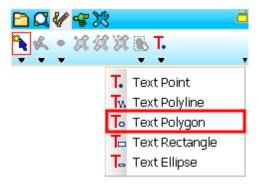
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Text Polygon

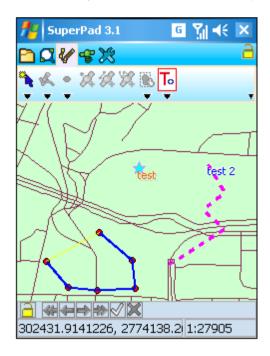


Text Polygon

1. To add text polygon, firstly switch to the Edit toolbar, tap the dropdown arrow of **Text Point > Text Polygon**.



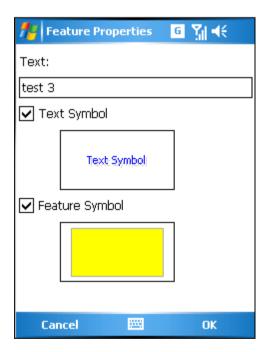
2. On the map, tap the turning points which will be the vertices of the polygon with the stylus (or mouse click). You do not have to precisely connect the start and end points manually but SuperPad will automatically connect them. After the vertices are selected, click **Text Polygon** again to finish the drawing and SuperPad will automatically connect the start and end points.



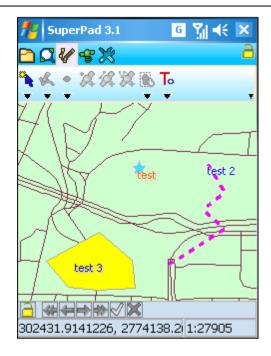
3. As the query dialog box shows up, please click **Yes** to add the text polygon.



4. When the "Feature Properties" dialog box opens, enter the text to show in Text field. Check Text Symbol and Feature Symbol to set up the font of text and the style of the symbol. When the settings are finished, click **OK**.



5. Go back to the map, the text polygon is added to the map.



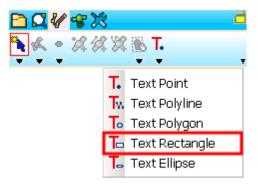
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Text Rectangle

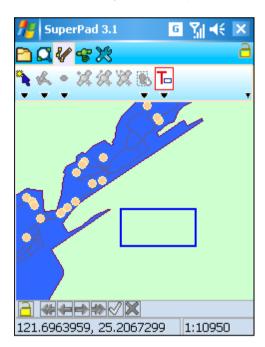


Text Rectangle

1. To add text rectangle, firstly switch to the Edit toolbar, tap the dropdown arrow of **Text Point > Text Rectangle**.



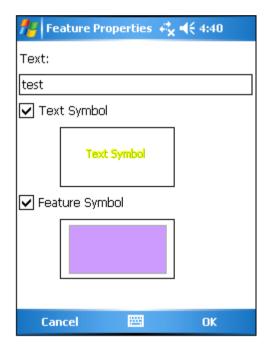
2. Drag and draw a rectangle on the map with stylus (or mouse click). The start point is the point the stylus taps the screen (or where you first click and hold the mouse left key) and the end point is the point where the stylus leaves the screen (or where you release mouse left key). The drawing is finished when the stylus leaves the screen (or mouse left key is released).



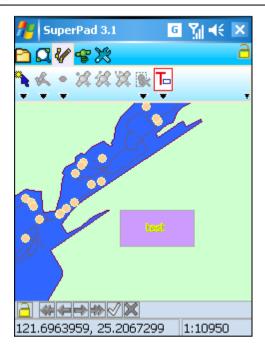
3. As the query dialog box shows up and tap Yes to add the text rectangle.



4. The "Feature Properties" dialog box opens, enter the text to show in Text field. Check Text Symbol and Feature Symbol to set up the font of text and the style of the symbol. When the settings are finished, click **OK**.



5. Go back to the map, the text rectangle is added to the map.



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Text Ellipse

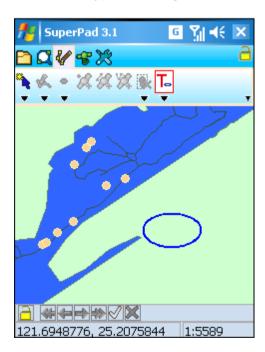


Text Ellipse

1. To add the text ellipse, firstly switch to the Edit toolbar, tap the dropdown arrow of **Text Point > Text Ellipse**.



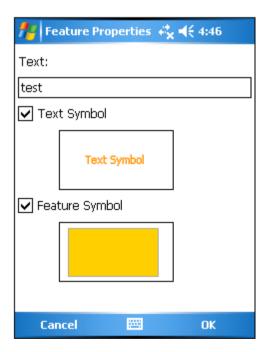
2. Drag and draw an ellipse with stylus (or click and hold the mouse left key). The start point is the point where the stylus taps the screen and the end point is the point where the stylus leaves the screen. When the stylus leaves the screen (or release mouse left key), the drawing is finished. The start point is the center of the circle.



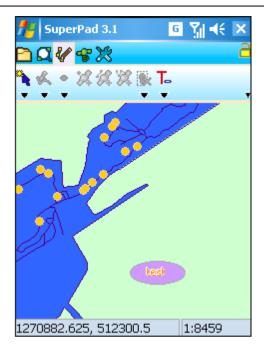
3. As the query dialog box shows up, please click **Yes** to add the text ellipse.



4. Enter the "Feature Properties" dialog box and enter the text to show in Text. Check the Text Symbol and Feature Symbol to set up the font of text and the style of the symbol. After the settings are finished, click **OK**.



5. Go back to the map, the text ellipse is added to the map.



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9.4 Editing with GPS Tools



Editing with GPS Tools

Editing with GPS is quite similar to editing with stylus or mouse. Firstly, the target layer should be editable; in the next, select the tool buttons designed particularly for GPS. The greatest difference between the two lies that SuperPad uses GPS received position to replace the position you used to input by stylus or mouse. Through GPS, point, line or polygon features can be created; or vertices can be inserted to the current feature with the GPS current position.

<u>Capture Point Using GPS</u> can be used under situations meeting the two conditions below:

- A point layer is set editable on the map.
- · GPS is activated.

Add GPS Vertex and Add GPS Vertices Continuously can be used under situations meeting the three conditions below:

- A line or polygon layer is set editable on the map.
- · GPS is activated.
- Segment Polyline button is in selected status.

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Capture Point Using GPS

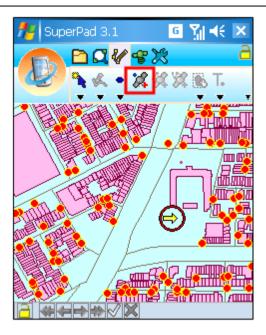


Capture Point Using GPS

To capture point using GPS, you should ensure a point layer is editable, and the **Point** button presents usable status in full colors. **Capture Point Using GPS** is to add a point feature at the current GPS position.

- First connect GPS with your mobile device or ensure the GPS settings of your mobile device.
- After the positioning successes, tap the GPS button on the main toolbar, switch to GPS toolbar; tap <u>Turn On GPS</u> on the toolbar and you will see the GPS cursor as

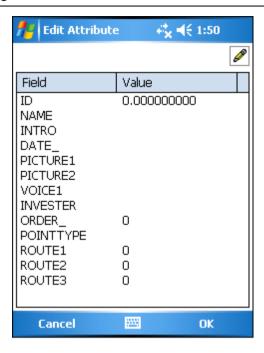
shows, which represents the GPS position. On toolbar, Capture Point Using GPS displays usable status now, tap the Capture Point Using GPS button on the tool menu.



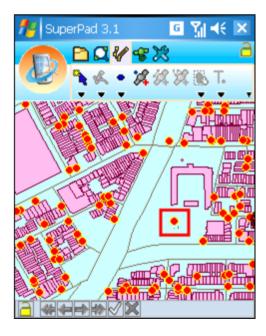
3. Message box shows up. If you are sure to add the feature, tap Yes; if not, tap No.



4. "Edit Attribute" dialog box shows up, in which you can create the attribute data for the new feature. After attribute data is accomplished, tap **OK**.



5. And you will see the created point feature on the map.



NOTE: when you want to run the GPS related functions, please turn on GPS first and ensure positioning works well. Thus, the related functions can work.

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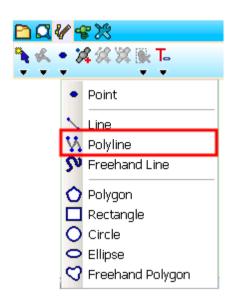
Add GPS Vertex



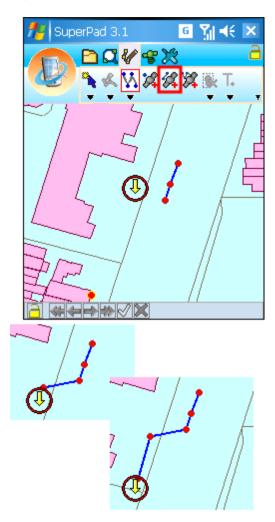
Add GPS Vertex

Connect GPS with your mobile device or ensure the GPS settings of your mobile device. After the positioning successes, tap the GPS button on the main toolbar, switch to GPS toolbar; tap <u>Turn On GPS</u>. Add GPS Vertex function should work together with creating new features. That is to say, <u>Polyline</u> or <u>Polygon</u> function should be activated prior to activating Add GPS Vertex function. After the vertices are well placed, finally a new feature is generated.

1. After GPS is activated, tap the dropdown arrow of Point > Polyline.



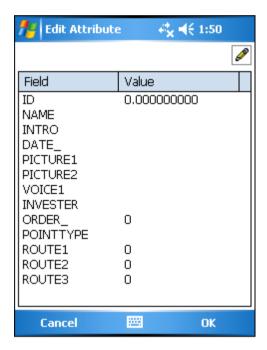
2. Now **Add GPS Vertex** function is in usable status, when GPS moves to the position you want to add a vertex, tap the **Add GPS Vertex** button.



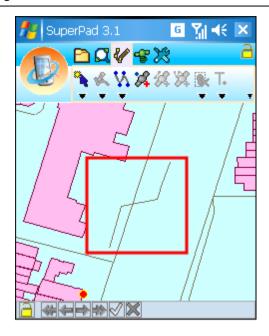
- 3. A vertex is added by tapping the button one time. After all vertices are well placed, you can tap again the **Polyline** button to finish the drawing.
- 4. Message box shows up. If you are sure to add the feature, tap Yes; if not, tap No.



5. "Edit Attribute" dialog box shows up, in which you can create the attribute data for the new feature. After the data is accomplished, tap **OK**.



6. You will find the polyline is added on the map.



7. Polygons can be created in the same way, too. You need to tap the button again if you would like to implement the function again.

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Add GPS Vertices Continuously

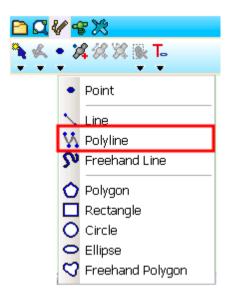


Add GPS Vertices Continuously

Firstly, connect GPS with your mobile device or ensure the GPS settings of your mobile device. After the positioning successes, tap the GPS button on the main toolbar, switch to GPS toolbar; tap <u>Turn On GPS</u>. Same as <u>Add GPS Vertex</u>, <u>Add GPS Vertices Continuously</u> function should work together with <u>Polyline</u> or <u>Polygon</u>, so <u>Polyline</u> or <u>Polygon</u> function should be activated prior to activating <u>Add GPS Vertices Continuously</u> to start to edit.

1. After GPS is activated, tap the Edit button on the main toolbar, switch to Edit

toolbar; tap the dropdown arrow of **Point** > **Polyline**.



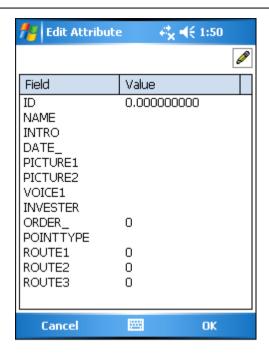
2. When GPS moves to the position where you want to add vertices, tap the **Add GPS Vertices Continuously** on the tool menu. SuperPad will add vertices continuously according to the GPS positions.



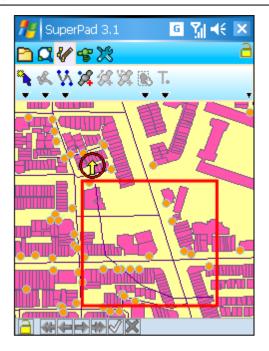
3. Tap **Add GPS Vertices Continuously** button again to finish adding vertices then tap again the **Polyline** button to finish the editing. Message box shows up. If you are sure to add the feature, tap **Yes**; if not, tap **No**.



4. "Edit Attribute" dialog box shows up, in which you can create attribute data. After the data is accomplished, tap **OK**.



5. You will find the polyline is added to the map. Polygon can be created in the same way as well.



NOTE: if the layer on which you are to create features is being graded (which means the symbol type is Graduated Symbol or Unique Symbol in layer properties), sometimes you might find that the created features do not appear on the map. In this case, please go check the attribute data of the created features. If the attribute values are outside the grades, the features will not appear on the map but are added to the layer indeed. Please reconfirm whether the attribute values are set correct or re-grade the layer. The created feature's attribute value will be also re-graded and displayed in the corresponding symbol.

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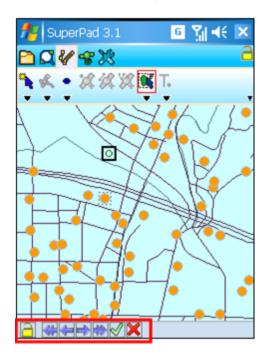
9.5 Smart Editing Bar



Smart Editing Bar

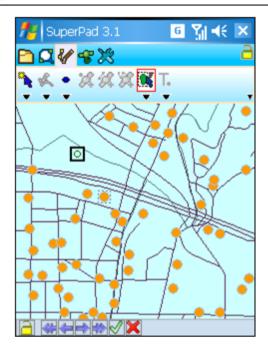
Smart Editing Bar is located at the lower left corner of the map, and it appears only

when the layer is editable and usable in editing mode. The functions it provides include undo, redo, write in, clear editing behaviors or screen lock. In the process of editing, each editing behavior is marked in black frame, while the original feature is marked in thinner dashed frame. So, you can know the difference between the two features.



Undo/Redo

If you follow the steps to start to edit a feature, you will see that the original feature remains at the position marked in thinner dashed frame. However, the edited behaviors will be marked in black frame. If you want to undo the edit, tap , the system will undo to previous action. If you want to redo the edit, tap to reverse the previous undone action.



Continuously Undo/Redo

In editing mode, if you want to undo several actions, tap . A list of actions shows up; "Initial" is the earliest editing action and others will be listed by order. In the list, you can select the action you want to undo directly, and the system will undo the selected action.



If you want to redo editing actions continuously, tap the button and a list of actions shows up. The item nearest to the button is the last editing action and others will be listed by order. In the list, you can directly choose the action to redo, and the system will reverse the selected action.



Write In

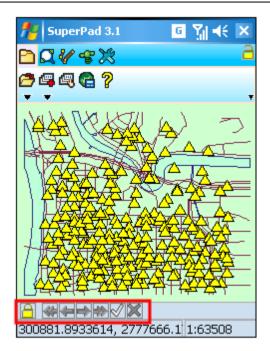
In editing mode, tap \checkmark and the editing actions will be written in file and be displayed on the map.

Clear Editing Behaviors

In editing mode, tap \times and all editing actions will be canceled, returning to before editing status.

Screen Lock

To prevent the map from being modified carelessly, **Screen Lock** function can be used to lock the map. Tap $\stackrel{\rightharpoonup}{=}$, and the icon will become locked status $\stackrel{\rightharpoonup}{=}$. Then, all of the tools on the map are unusable, and neither is the map. Therefore, the map is unable to be amended at all. To cancel **Screen Lock**, tap $\stackrel{\rightharpoonup}{=}$, and the icon will become unlocked status $\stackrel{\rightharpoonup}{=}$. The map is able to be manipulated.



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Chapter



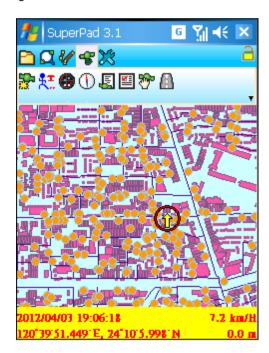
10 GPS

10.1 Turn On/Off GPS



Turn On/Off GPS

1. Tap the GPS button on the main toolbar, switch to GPS toolbar, tap **Turn On GPS** to connect SuperPad and GPS receiver. After GPS is activated, the icon turns green.



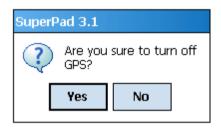
2. After GPS positions successfully, a GPS status bar appears on the bottom of the map, indicating the information of longitude, latitude, date, time, speed per hour and altitude. If the coordinate information is displayed in degree format, it can be switched to numeric format as tapped with stylus or mouse on coordinate information, and if it is displayed in numeric format, you can tap it to switch to the

degree format. If the unit of speed per hour is kilometer, it can be switched to mile as tapped with stylus or mouse on speed information.

2012/04/03 19:06:18 7.2 km/H 120*39*51.449*E, 24*10*5.998*N 0.0 m 2012/04/03 19:09:43 4.5 mile/H 120.6637553, 24.1719897 0.0 m

A yellow cursor inside a red hallow circle represents the GPS position. And the yellow cursor is pointing the heading direction, while the yellow trail by the end of the yellow cursor is GPS trail. The lighter the trail color is, the more distant the

3. If you want to turn off GPS, tap **Turn Off GPS** and message box shows up. If you are sure to turn off, tap **Yes**; if not, tap **No**.



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10.2 Tracklog Record

current GPS position is.



Tracklog Record

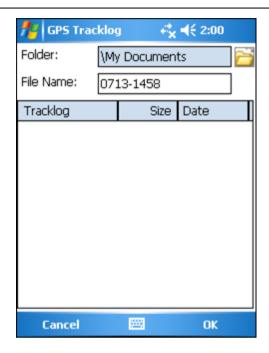
GPS tracklog records your trail. When GPS is activated, turn on tracklog and SuperPad will start recording GPS tracklog till you stop it.

1. Tap the GPS button on the main toolbar and tap **Tracklog Record** 🄀 on the

toolbar.



2. "GPS Tracklog" dialog box appears. Tap
 and select the storage path in Folder. Date and time are automatically input in File Name (0713-1458 means July 13th - Fourteen fifty eight) or you can input on your own. Tap **OK** and SuperPad begins to record tracklog.

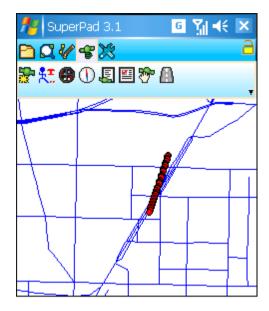


3. When you want to stop recording tracklog, please tap **Stop Record** button on the toolbar and message box shows up.



4. If you are sure to stop, tap Yes; if not, tap No. The tracklog file will be stored in the assigned folder in KML (*.kml) file by default.

The format of tracklog can be set to save in KML (*.kml), SHP (*.shp) or GEO (*.geo) in the <u>Tracklog</u> tab of <u>GPS Options</u>; even you can assign to record in point, line or polygon format. As to tracklog settings, please refer to <u>Tracklog</u> tab of <u>GPS Options</u> in this chapter. If the tracklog is recorded as a layer, it can be added and viewed in SuperPad. See the figure below, it is a tracklog geo file in point format being displayed in SuperPad.



NOTE: the tracklog can be stored in KML format, Keyhole Markup Language. It is a language adopting XML syntax and format, used to describe and store geographic messages (such as point. line, polygon and model), and can be identified and displayed by various GIS software, like Google Earth.

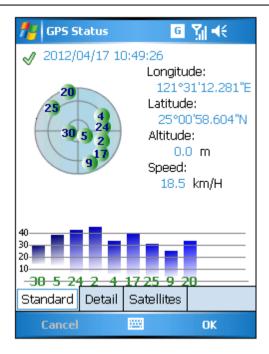
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10.3 GPS Status



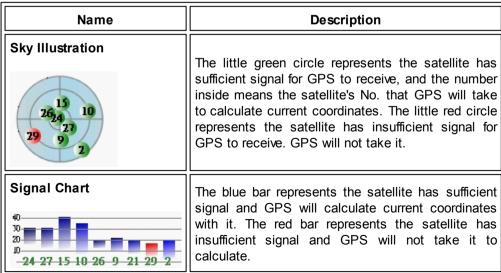
GPS Status

Connect SuperPad and GPS according to the method mentioned above. Tap the GPS button on main toolbar, switch to GPS toolbar and tap the **GPS Status**. Then the satellite information will be displayed on GPS Status window.



In the part of GPS status, the number of effective received satellites and the signal intensity can be viewed. Now we are to explain each tab respectively:

Standard



GPS Information

Lonaitude:

121°37'44.708"E

Latitude:

25°12'18.376"N

Altitude:

0 m

Speed:

19.44 km/H

Here are the current GPS information:

- 1. Longitude: the longitude of your current position.
- 2. Latitude: the latitude of your current position.
- 3. Altitude: the height of your current position, calculated from the sea level.
- 4. Speed: your current heading speed per hour.

Detail

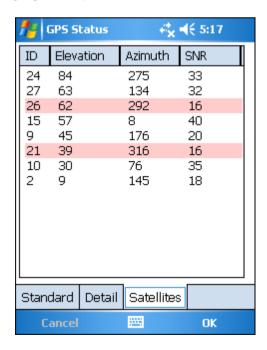


Name	Description	
Date	Date and time.	
UTC	Coordinated Universal Time.	

Longitud e	The longitude of your current position.	
Latitude	The latitude of your current position.	
Altitude	The height of your current position, calculated from the sea level.	
Speed	Your current heading speed per hour.	
Track	The azimuth of heading direction.	
Mode	Display mode.	
PDOP	The position dilution of precision.	
HDOP	The horizontal dilution of precision.	
VDOP	The vertical dilution of precision.	

Satellites

Display the information of each satellite. The satellites of insufficient intensity are highlighted in pink color.



Name	Description	
ID	Number of satellite	
Elevation	Elevation.	
Azimuth	Azimuth.	
SNR	Signal to noise ratio	

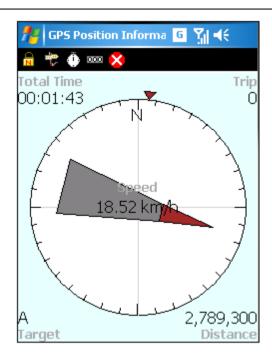
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10.4 GPS Position Information



GPS Position Information

Tap the GPS button on the main toolbar, switch to GPS toolbar and tap the **GPS Position Information** button. The GPS Navigation window shows up.



Name	Description	
Total time	The total time since orientation starts till now.	
Target	The place where user wants to go.	
Distance	The straight line distance from current position to target.	
Trip	The heading distance.	
Speed	The speed rate of user to the waypoint.	

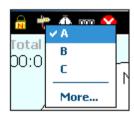
The little triangle outside the circle means the waypoint, the destination. The indicator points at the GPS heading direction; the visible N refers to the north.

On GPS Navigation window, the messages about waypoint can be viewed, also the settings can be changed by tapping the icons on the top of the window. The following are the descriptions for these icons:

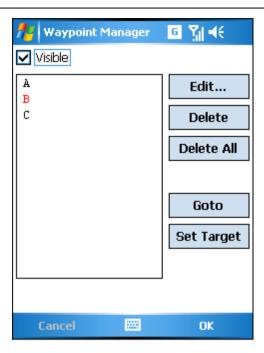
Name	Description
North Lock 🔒	Locked , north is locked at the upward side of the compass; unlocked , the heading aspect is always at the upward side of the compass. As you tap the North Lock, the locked icon turns to be unlocked icon, and the north aspect will no longer be fixed at the upward side of the compass, but the heading aspect will. That is to say, the heading aspect will be fixed to the upward side of the compass.
Waypoint manager	Tap Waypoint and a pop-up menu shows up. You could select the waypoint from the menu by checking it. Or you could click More to reveal "Waypoint Manager" dialog box. Here you could edit or delete waypoint or set up your target.
Time ①	Reset total time.
Trip distance	Reset total trip distance.
Close 😵	Close navigation window.

Waypoint Manager 🚏

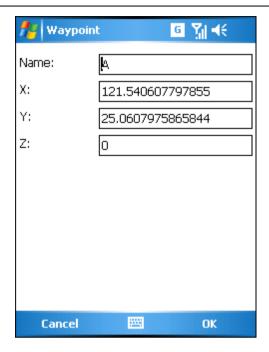
All waypoints are listed here; select one to set as current destination to go.



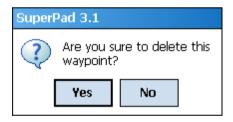
Tap "More..." and "Waypoint Manager" dialog box shows up. Select a waypoint and choose the function in the right side to manage the waypoint. The red waypoint is the current target to go.



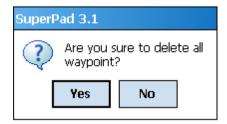
Tap "Edit" and Waypoint dialog box shows up. You can edit the name XYZ of the selected waypoint.



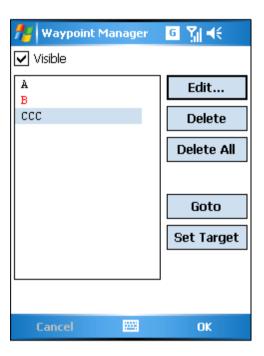
Tap the "Delete" button, and message box shows up. Tap "Yes."



Press "Delete All" button shows the message box. If you are sure to delete all waypoints, tap "Yes."



Tap the "Goto" button and the map will zoom to the specified waypoint. Tap the "Set Target" button and the selected waypoint will set as the destination and it will be marked in red.





If you check "Visible", the waypoint icon will be displayed on the map. If not, it will be invisible.



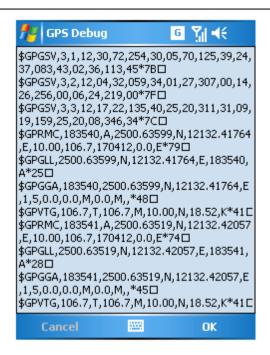
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10.5 GPS Debug



GPS Debug

Tap the GPS button on the main toolbar, switch to GPS toolbar and tap the **GPS Debug** button. The GPS signals are shown on the window.



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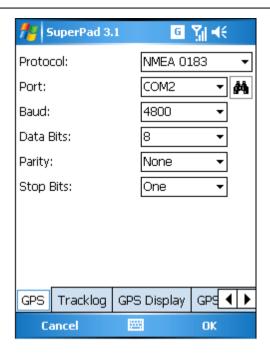
10.6 GPS Options



GPS Options...

Before GPS is activated, please set up the GPS settings to successfully connect GPS and SuperPad.

Tap the **GPS** button on the main toolbar, switch to **GPS** toolbar > **GPS Options**. "GPS Options" dialog box shows up. It contains ten tabs: <u>GPS</u>, <u>Tracklog</u>, <u>GPS Display</u>, <u>GPS Height</u>, <u>Spatial Reference</u>, <u>Location</u>, <u>Log</u>, <u>Misc</u>, <u>Altert</u> and <u>Editing</u>.



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GPS



GPS

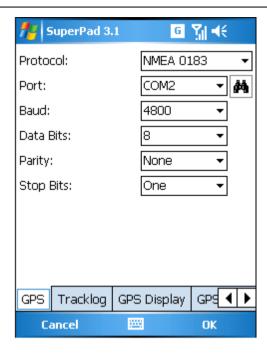
Follow the GPS settings to adjust the items.

Protocol: select the suitable protocol and the default is NMEA0183.

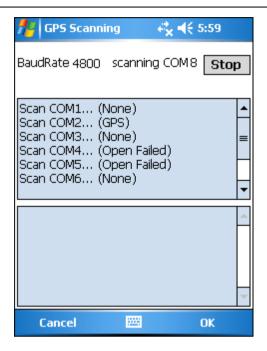
Port: select the correct port and the default is COM8.

Baud: select a suitable item, the default is 4800.

Data Bits: the default is 8. **Parity:** the default is None. **Stop Bits:** the default is One.



If you are not sure the correct port, make sure GPS connection and power are ready. Then, tap in ext to Port, so the system will automatically detect the usable port.



After the data is finished, tap **OK**.

If you do not understand the contents of GPS items, please see the description below:

Name	Description
Protocol	Select the GPS protocol.
Port	Select the port to connect GPS with mobile device.
Baud	Select the Baud rate of GPS receiver, nine options available including 1200, 2400, 4800, 9600, 19200, 28800, 38400, 57600,115200.
Data Bit	The Bit count that GPS can deliver.
Parity	The parity count that GPS delivered, including four options of None, Even, Odd and Mark Space.
Stop Bit	The last bit value that GPS delivers.

NOTE: NMEA0183 is the specification defined by National Marine Electronics

Association (NMEA). When the positioning information such as longitude, latitude, successfully positioning code, adopted satellite count, signal intensity, satellite azimuth, elevation, date, UTC time, DOP and so on from satellite are received by GPS receiver, they will be transferred to GPS position of latitude and longitude in NMEA0183 format and displayed on the window.

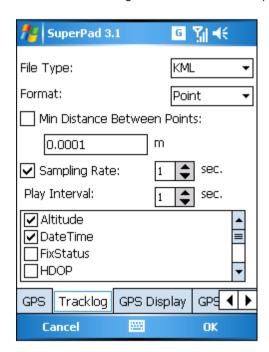
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Tracklog



Tracklog

In this tab the tracklog contents can be set up according to your request.



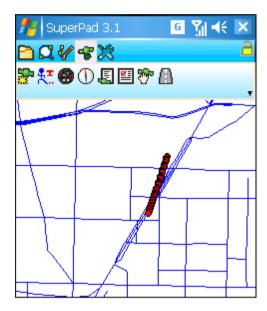
The contents include:

File Type: the tracklog can be saved in KML, SHP or GEO file. To KML, it can be read

and displayed by various GIS software. Or to SHP and GEO layer, they can be used in Supergeo series products.

Format: Tracklog can be recorded in point, line or polygon. The point format tracklog displays in point. The line format tracklog displays in line. The polygon format tracklog displays in polygon. In other words, if the tracklog is saved to layer (*.geo or *.shp), the layer type will be identical to the recording format. As a result, point format transfers to point layer, line format transfers to line layer, and polygon format transfers to polygon layer.

See the figure below. It is the tracklog saved in GEO layers in point format then being added to SuperPad.



Min Distance between Points: set the distance between the previous and next points when sampling. Unit is degree.

Sampling Rate: the sampling rate, the unit is second. It indicates how many seconds a sample will be taken.

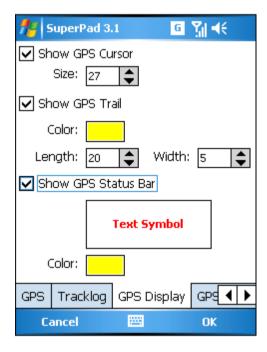
Play Interval: set the unit is second. That is how many seconds a tracklog will be played.

GPS Display



GPS Display

After GPS is activated, GPS cursor and the trail will show up on the map. In this tab, you can set whether to show GPS cursor, trail and GPS status bar.



GPS cursor: you can set whether to show GPS cursor and its size. The cursor will be a yellow cursor surrounded by a red hallow circle . Check this item and GPS cursor shows; if not, it disappears.

GPS trail: you can set the color, length and width of trail selected by tapping the color block in basic or advanced tab. The default is yellow. And the lighter the trail's color is, the farther the distance to GPS position is. Check this item and GPS trail shows; if not, it disappears.

GPS status bar: GPS status bar shows on the bottom of the map. The status bar is

2009/05/08 16:01:39 424°32'7 865'#- 25°02'48 58 19.4 km/H

translucent yellow, and text is red 121°32'7.865'E, 25°02'48.587'N 0.0 m. To change the font and color of the text, please tap Text Symbol to change. Check this item and the GPS status bar will show on the bottom; if not, it disappears.

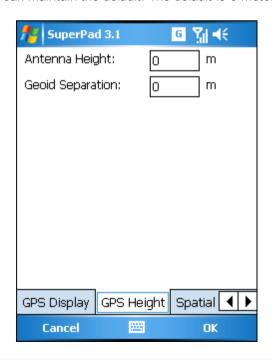
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GPS Height



GPS Height

Set up the GPS antenna height and geoid separation. If the GPS receiver is placed several meters above the ground, you can enter the antenna height. Then, when GPS is calculating position, the distance will be deducted and more precise position information could be obtained. For the same reason, you can enter the geoid separation to deduct the discrepancy. Please enter according to your preciseness request, or you can maintain the default. The default is 0 meter.

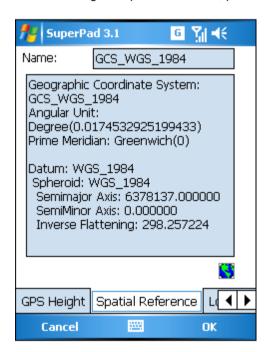


Spatial Reference



Spatial Reference

Tap the earth icon at the bottom right corner and set the spatial reference. As to the details of setting the spatial reference, please refer to Map Properties.



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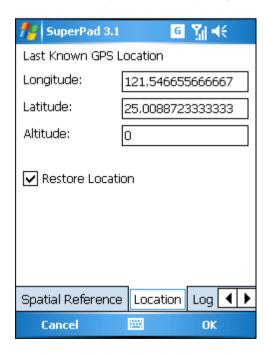
Location



Location

When the coordinates of current position are not obtained by GPS yet, the system will automatically read the longitude, latitude and altitude of the last known GPS position till the current position is obtained.

If "Restore Location" is selected, the position that is located in the longitude, latitude and altitude fields will be used to be the initial GPS position to search the current position. This position offers GPS receiver with an initial position to track the satellite and obtain current position more quickly.



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Log



Log

If Logged File is checked, the data that GPS receiver outputs will be logged in .TXT file. Tap to select the storage path. To activate log, the Logged File should be checked before GPS is activated so that it could start recording. GPS log could be used to solve GPS problems, since all the information that SuperPad receives from GPS receiver is well recorded in it.



Enter message in GPS Initialization String, and the message will be sent to GPS receiver when GPS is activated. The function of GPS Initialization String is commonly used to send command to GPS receiver and specify the output options of GPS receiver. For instance, you can use GPS Initialization String to specify the GPS receiver to output data as Pedestrian mode or Vehicle mode.

Misc



Misc

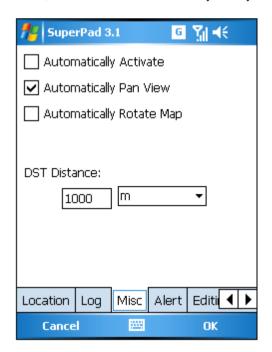
Automatically Activate: when a SuperPad map file defined with coordinates is opened, GPS will be activated automatically.

Automatically Pan View: SuperPad will automatically pan map and keep the GPS position center of the map.

Automatically Rotate Map: map is rotated according to the GPS heading direction.

You can activate the three options mentioned above by checking the items.

DST Distance: when the distance from GPS position to the destination is less than distance you set in this box and also in Alert tab, Approaching destination is checked for alert, the alert will be activated by the system.

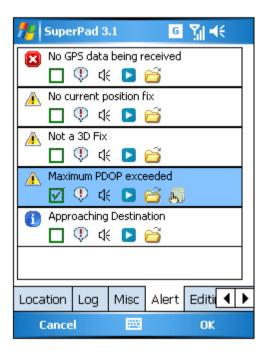


Alert



Alert

You can decide whether to show alert message by checking when GPS data are under the situations as below:



- 1. **No GPS data being received**: when GPS is activated but no message is received from GPS receiver in SuperPad, the system will send alert automatically.
- No current position fix: when GPS receiver can not position, and no coordinates
 can be received from GPS receiver in SuperPad, the system will send alert. It usually
 occurs when less than three effective satellites are received by GPS receiver so that
 GPS can not position successfully.

- 3. **Not a 3D fix**: if the received GPS coordinates include X, Y coordinates only but no Z coordinate, the system will send alert as this option is checked.
- 4. **Maximum PDOP exceeded**: tap the and enter the "Gps Quality" dialog box to set up the option (PDOP/HDOP/VDOP...) . As the received value exceeds, the system will send the alert.
- Approaching Destination: if the distance of current GPS position to the destination is less than the set distance in DST Distance in Misc tab, the system will automatically send the alert.

The advanced settings, you can decide whether to use the items below by tapping or clicking the icon:

- A. Text alert.
- B. [⊈]Voice alert.
- C. Tap le to play the voice effect.

If the tapped icon appears with "x", it means this function stops. Besides, you can change the voice file by tapping ...

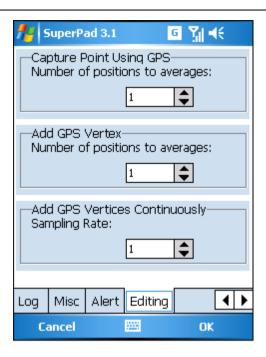
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Editing



Editing

Number of positions to averages: when editing using GPS, the system will use the average of GPS positions to be the position. In this way, the system can acquire more precise result than capture of one single GPS position, and the inaccuracy can be reduced as well. Number of positions to averages means to get an average value from a specific quantity of GPS positions. It is suitable for <u>"Capture Point Using GPS"</u> and <u>"Add GPS Vertex"</u>. For instance, set 10, it means that to get the average value from 10 GPS positions. At last, a vertex at the position of the average value is added. <u>"Add GPS Vertices Continuously"</u> sampling rate, the unit is second, it means a sample will be get in the second you set, and a vertex will be added.

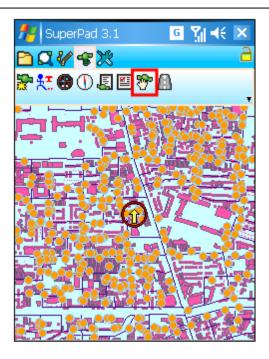


10.7 Pan to GPS



Pan to GPS

The function can pan the map to the current GPS position once. If GPS position is not within the map window, tap the **Pan to GPS** button and the map will be immediately panned to the current GPS position.

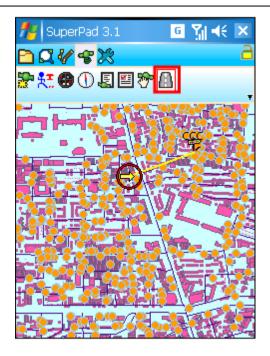


10.8 GPS Navigation Mode



GPS Navigation Mode

Before using **GPS Navigation Mode**, waypoint should be set up first so that the function can be activated by specifying waypoint. As to the settings of waypoint, please refer to <u>Add Waypoint</u>. As the waypoint is set up, switch to GPS toolbar and tap **GPS Navigation Mode**. GPS will guide you to the waypoint.



GPS Navigation Mode and Automatically Rotate Map functions are both relevant to GPS; however, the ways to move are different. GPS Navigation Mode will pan the map along GPS position. The map will be panned only when the GPS position is nearly out of the map window, so GPS position can be kept within the map window. Since the map orientation is always fixed, the GPS heading direction on PDA might head upward, downward, leftward, rightward or any direction according to GPS. On the other hand, the Automatically Rotate Map in Misc tab of GPS Options works in another way. The map orientation always changes according to the GPS heading direction, which is always fixed at the top of the screen. Therefore, if GPS heads to the east, SuperPad will rotate the map and display the east at the top of screen. For the reason, you will find the map window rotates according to the GPS direction continuously, and that is why it is named Automatically Rotate Map please refer to the Misc tab of GPS Options.

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Chapter



11 System Settings and Others

11.1 System Settings



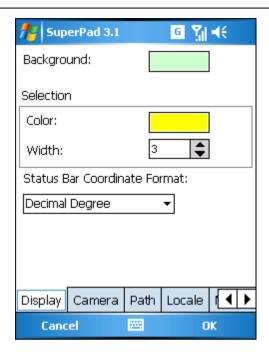
System Settings

Many parameters need to be set in **System Settings** in SuperPad. Please set up based on your requirements. Or use SuperPad by default first. Later, when you need to adjust, please go to **System Settings** to change

1. Tap the System Settings button on the main toolbar, switch to **System Settings** toolbar and tap the **System Settings** button.



2. In the dialog box, there are thirteen tabs, and you can switch the tabs by tapping the leftward of rightward arrow on the right side.

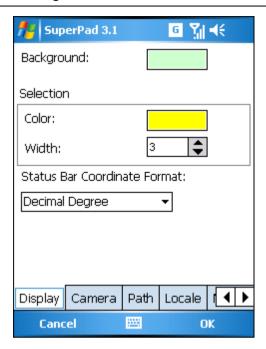


Display



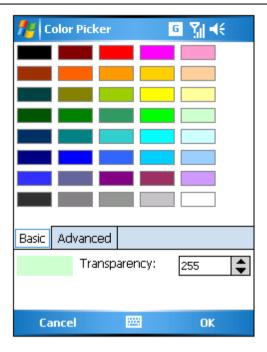
Display

Set up the display related settings, including Background, Selection and Coordinate Format.



Background

The map's background color. Tap the color block to select the background color, and the default is white. Tap the color block on the right side entering "Color Picker" dialog box and select a color from basic or advanced color.



Selection

Tap the color block of Color to decide the selection color; the default color is yellow. Tap the block on the right side, entering "Color Picker" dialog box and you can choose to select a basic color or advanced color. For instance, in querying feature, the selected feature will be highlighted in yellow flash.



System Settings and Others

Width is to set up the width of color. The wider the color you set, the more exaggerated the selected feature can be displayed.

Status Bar Coordinate Format

How the coordinate format shown on the status bar when stylus (or mouse) is being moved on the map can be changed. Three options are available and the default is Degree.

Degree: 121.5394974, 25.067955 Degree Minute: 121°31.92856', 25°3.37234' Degree Minute Second:

121°31'25.364", 25°2'50.467"

After the settings are finished, tap **OK**.

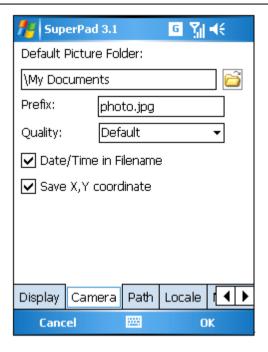
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Camera



Camera

In field survey, the surveyors usually take pictures of the real scenery with camera for recording and observation. SuperPad also supports to take pictures using PDA equipped with camera function. The picture format is JPG (*.jpg). Moreover, PDA equipped with GPS function can record the coordinates of the place where you take the picture in SuperPad. Therefore, the picture can record image, coordinates and time for easier arrangement and even can be used to produce photo layers.



Camera Tab

Default Picture Folder: when the picture is taken, it is stored in this folder. Tap be to select the storage folder.

Prefix: every file you save will be given a name according to this prefix.

Quality: the quality of picture, four options including default, low, normal and high.

Date and Time in Filename: if the item is checked, when pictures are stored, date and time will be appended to prefix directly. Please see the part of file name of the figure on the upper right side.

Save X, Y Coordinate: if you take pictures with PDA equipped with GPS function, the coordinates of the place you take pictures will be saved. So, in the future, when you are arranging these pictures, they can be positioned directly on the map according to the coordinate values (the coordinate values are saved in EXIF Marker of JPG file).

NOTE: if PDA does not equip with camera function, the camera function in SuperPad can not be used. And it is only usable in smart device equipped with camera function, not for the PC. The obtained coordinate values will be stored in EXIF (Exchangeable Image File Format) of JPG file. EXIF refers to exchangeable image file format, which is used to set up the digital picture's information. It is a standard format to record the properties messages and data of the digital pictures. And the coordinate values are recorded in it.

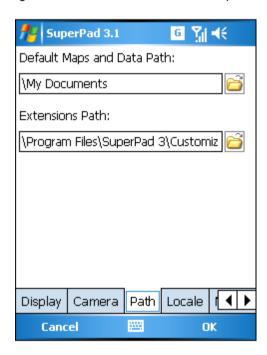
Path



Path

Default Maps and Data Path: Set up the path to access map or data file. Moreover, as SuperPad starts, the map files listed in the "Open Map" dialog box are exactly what are stored in this path.

Extensions Path: Set up the path for SuperPad to read the custom extensions. As long as the custom extension files are placed to this path, SuperPad will read it.



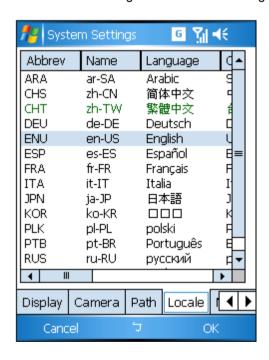
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Locale



Locale

The system provides Fourteen kinds of user interfaces in Traditional Chinese, Simplified Chinese, English, Japanese, Spanish, German, French, Arabic, Turkish, Russian, Italian, Korean, Polish and Portuguese. After the language is selected, tap **OK** and the user interface is changed to the selected language.



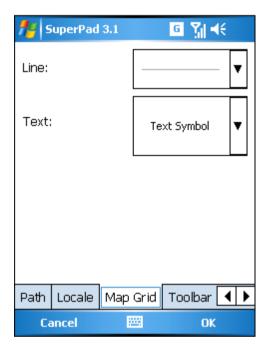
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Map Grid

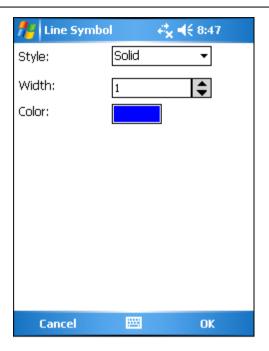


Map Grid

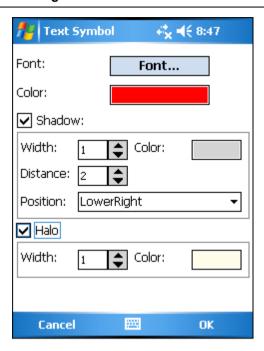
In the map grid tab, you can decide the Line and Text. Map grid will show the longitude and latitude lines on the map and indicate the value on the map.



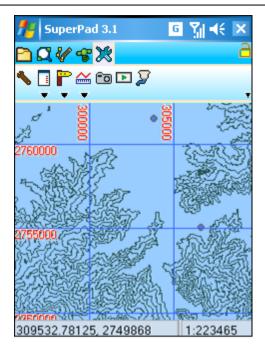
Tap Line to enter "Line Symbol" dialog, please set up for each item, including Style, Width and Color.



After the settings are done, continue to set up the text. Please set up according to your preference.



If you choose to show the map grid on the map, the map grid will be displayed on the map based on the settings.



If the Spatial reference of the map is Geographic Coordinate System, and the map grid label will be presented in latitude and longitude format.

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ToolBar



ToolBar

ToolBar tab allows you to choose the color of toolbar.

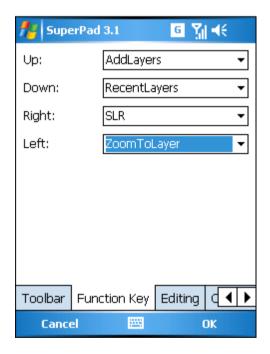


Function Key



Function Key

This function is for PDA only. In general, PDA device has up, down, right, and left keys below the screen, and this function is to set up the express functions for the four keys. Tap the dropdown arrow of each item, a function menu for selection shows up and you can choose the function to give the key. After the settings are finished, once any one of the keys is pressed, the given function will perform.



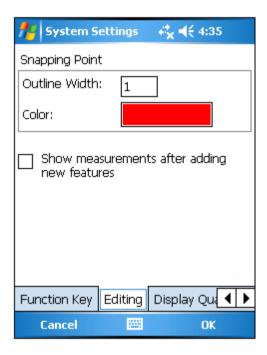
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Editing

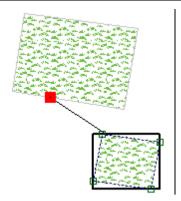


Editing

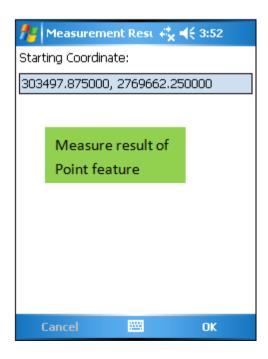
In Editing tab users can set up whether to particularly mark the snapping position in specified color when snapping features. For example, if we set up to mark the snapping position in red, see the figure below.

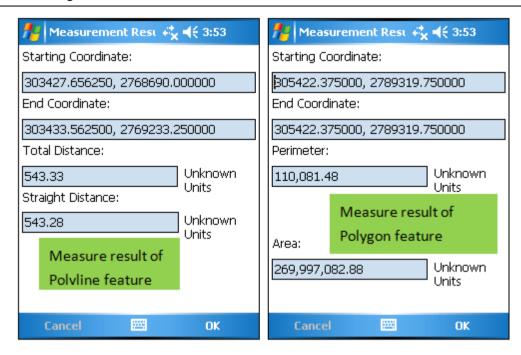


When snapping features, the snapping position will be displayed as the color defined.



To check "show measurements after adding new features" will display the Feature Measurement dialog box right after a feature is added up. The measurement result is exactly the same as what is obtained by using Feature Measurement tool. Please refer to Feature Measurement for measurement result details.



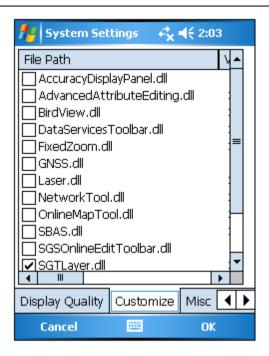


Customize

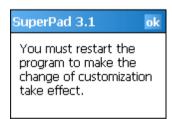


Customize

In general manipulating SuperPad is easy and flexible. Moreover, the plug-in add-ons can be added to the program to improve the working efficiency. SuperPad plug-in add-ons are able to be generated by SuperGIS Mobile Engine in *.dll file. SuperPad will need to be restarted to activate the extension's functions after the extension items are ticked to make the functions take effect.



Please check the add-on you want to use and tap **OK** and a message box shows up. Please close and restart SuperPad to activate the selected add-on's functions. In other words, as SuperPad restarts, the selected extension or project file will be added to the toolbar.



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AccuracyDisplayPanel



AccuracyDisplayPanel

This add-on takes to work together with GPS, which presents the accuracy of GPS display. As GPS turns on in SuperPad, the GPS accuracy info will present at the upper right corner on screen. Take the figure below as an example, 4.6 means the accuracy, the less value has the higher accuracy; 4 means the number of satellites that SuperPad collects. The green signal means 3D orientation, which has better precision; the red signal means 2D orientation or below or insufficient info, which is less precise.



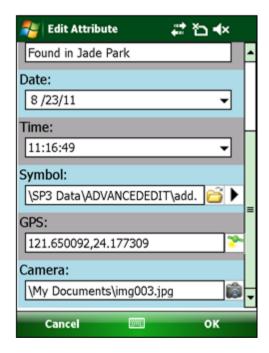
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AdvancedEditAttribute



AdvancedAttributeEditing

This add-on allows users to create custom forms to enter attribute values and to modify attribute values. A custom form used to enter attribute values is a quick menu that is particularly designed according to the features of the attribute to enable users to quickly enter attribute values. For instance, there is a layer whose contents of attribute table should be input in date format, in that case the field format can be set as yyyy/MM/dd with custom form. While users are editing the field, they can select a date by clicking instead of typing each word. Another example, users should enter file path in a File field, if it has no custom form, users will have to enter the complete file path (ex:/sdcard/SuperPad/Photo/butterfly1.jpg/) on their own. But with the custom form, users can set the custom form in File Name type and system will enable users to browse and select the file path to directly input the field when editing, which saves lots of time. The custom form offers a quick menu to enter the attribute values so that users can enter the data in a simplest and quickest way when doing the field survey.



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Creating a custom form

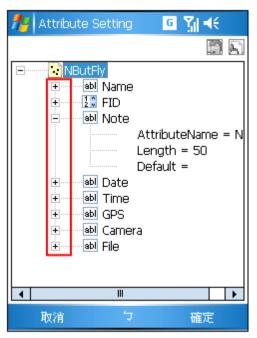


Creating a custom form

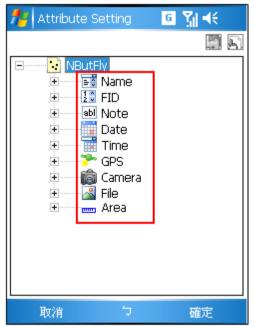
 Attribute Setting function enables users to create the custom forms which are used to enter attribute values. Firstly, tap Attribute Setting and select the layer which you want to create the custom form for.



2. The "Attribute Setting" dialog box shows up, and all the attributes are listed in it. You may tap * to expand the format of the attribute or tap • to hide. After an attribute is selected, you can change the type of the attribute by tapping . You can set the contents of attributes by tapping .

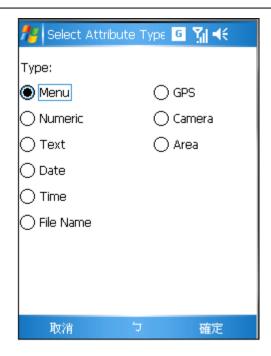


The attributes without custom form are either in numeric or text type.



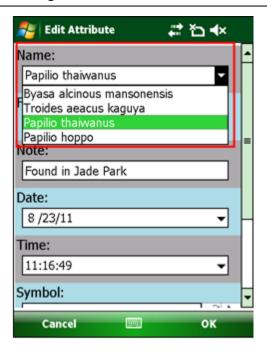
The attributes with custom form have 9 different types at most.

3. Tap and "Select Attribute Type" dialog box shows up. This extension provides nine types of attribute and each type has different format. Now we will describe the function and settings of each type.





When editing attribute using **Advanced Edit Attribute** tool, users can select the suitable item to be attribute value from the drop-down menu directly.



<u>Settings</u>

In the "Menu Attribute" dialog box, users can add Values (items of the drop-down menu) by tapping +. The "Menu Attribute Item" dialog box shows up, please enter the content of the item and if you want to set as the default settings, check "Default." When the setting is finished, please tap **OK**. Follow the method and create all Values. If a Value is selected, users can adjust the order by tapping +, delete one single Value by tapping + or remove all Values by tapping +. And the contents of Value can be modified by tapping +.

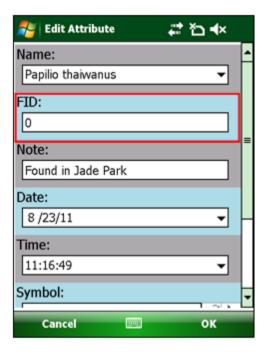




Numeric

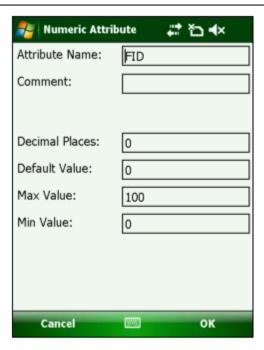
Function

When editing attribute using **Advanced Edit Attribute** tool, users can directly enter the value.



Settings

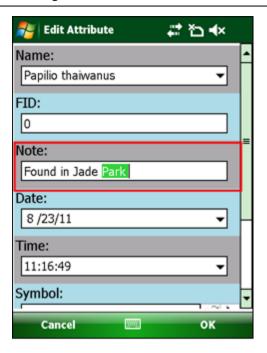
Users can set the attribute name, comment, decimal place, default value, maximum value and minimum value on the "Numeric Attribute" dialog box.





Function

When editing attribute using Advanced Edit Attribute tool, users can directly enter the text.



Settings

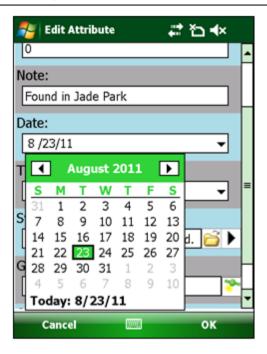
Users can set the attribute name, comment, the length of the text, default text on the "Text Attribute" dialog box.





Function

When editing attribute using **Advanced Edit Attribute** tool, users can directly tap the date form to get the date or directly enter manually.



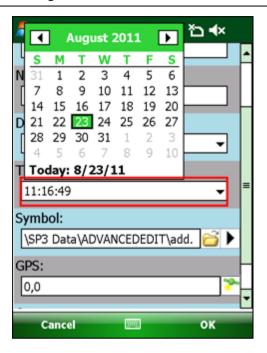
Settings

Users can set the attribute name, comment and date format on the "Date Attribute" dialog box. If Auto Generate On Creation or Auto Generate On Update is checked, the Date will be generated automatically while the feature is being added or updated.



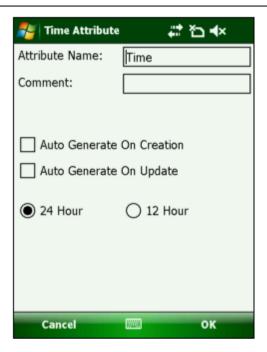


When editing attribute using **Advanced Edit Attribute** tool, users can enter time.



Settings

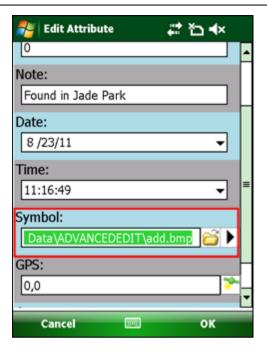
User can set the attribute name, comment and define 24 hours or 12 hours format on the "Time Attribute" dialog box. If Auto Generate On Creation or Auto Generate On Update is checked, the Time will be generated automatically while the feature is being added or updated.



File Name

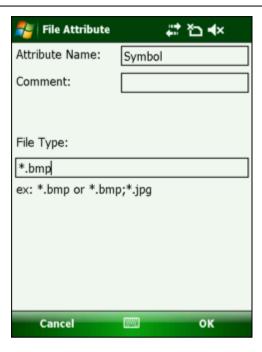
Function

When editing attribute using **Advanced Edit Attribute** tool, users can browse the file path by tapping and system will automatically enter the file path. Besides users can preview the file by tapping.



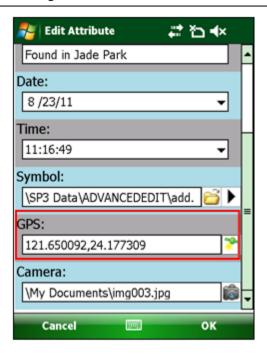
Settings

Users can set the attribute name, comment, file type on the "File Attribute" dialog box. The extension of file should be clearly specified in file type.



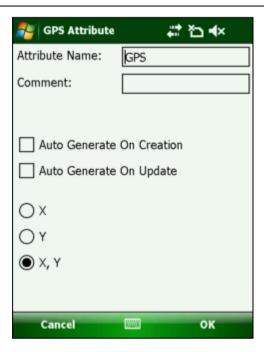
GPS Function

When editing attribute using **Advanced Edit Attribute** tool, users can make the current coordinates be entered to the field automatically by tapping or they may enter manually. Please be noted that the GPS of SuperPad should be turned on before the activation of making coordinates be entered by system.



Settings

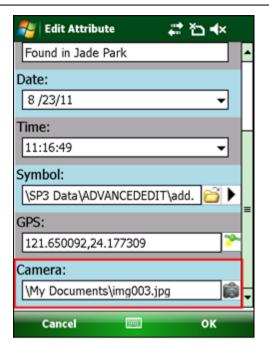
Users can set the attribute name, comment and GPS format on the "GPS Attribute" dialog box. Users can define GPS format in X or Y or X and Y. If Auto Generate On Creation or Auto Generate On Update is checked, the GPS will be generated automatically while the feature is being added or updated.





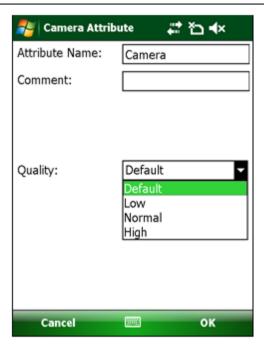
Function

When editing attribute using **Advanced Edit Attribute** tool, users can directly take a picture by tapping the camera icon and the file path of the picture will be entered to the field automatically. Please note that the mobile device must be equipped with camera function so this function can be performed. The picture files are saved in the camera path that the System Settings defines.



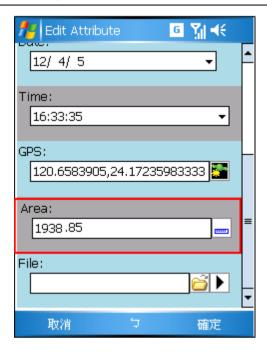
Settings

You can set the name of attribute, comment and picture quality in the Attribute Setting dialog box. Picture quality has four options Default, Low, Normal and High.



Area Function

When editing attribute with **Advanced Edit Attribute**, you can tap the Area icon and record the area of the feature.



<u>Settings</u>

In Area Attribute you can set the attribute name and comment.



4. After the settings are finished, please tap **OK**. You can tell the type of the attribute field according to the icon on the "Attribute Setting" dialog box.



5. The custom form to enter attributes is created.

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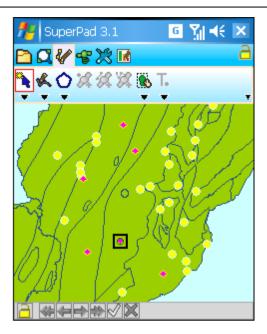
Advanced Edit Attribute



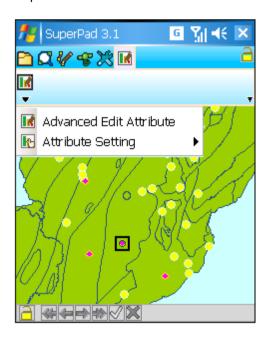
Advanced Edit Attribute

After the custom form is created, you can edit the attributes with **Advanced Edit Attribute** function in a quicker way.

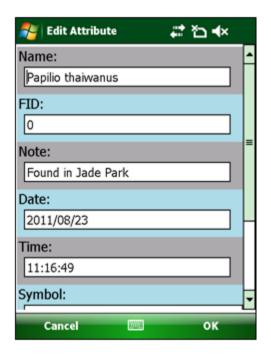
1. Firstly, set the layer whose attributes you want to modify editable, and then select a feature.

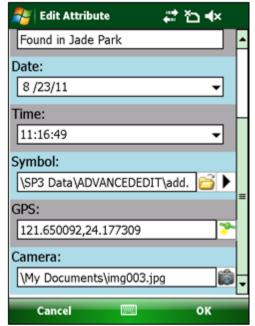


2. Tap the **AdvancedAttributeEditing** tool and tap **Advanced Edit Attribute** on the drop-down menu.



3. The "Edit Attribute" dialog box shows up, please modify the attribute values according to your need. After the modification is finished, please tap **OK**. Please see the two figures below and you can easily understand how convenient the custom form could be: when you are using the **Advanced Edit Attribute** function, you have to enter all the data on your own if no custom form is available; if you have the custom form, you can quickly enter the data with the specially designed forms.





Attribute table without custom form

Attribute table with custom form

4. When the editing is finished, tap **OK**. The advanced attribute editing is accomplished.

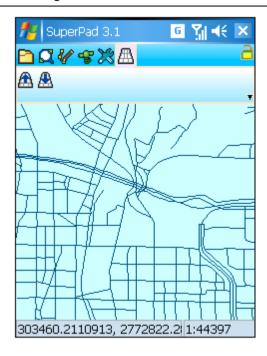
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BirdView



BirdView

2.5D bird view function makes the map be displayed with 3D effect and look more like the reality. Tap the **BirdView** button on the main toolbar and switch to **BirdView** toolbar.



Repeatedly tap the ^{the least table to button and the angle of depression will decrease. Repeatedly tap the ^{the least table tap the table table tap the table tab}}

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DataServicesToolbar

Add WMS Server



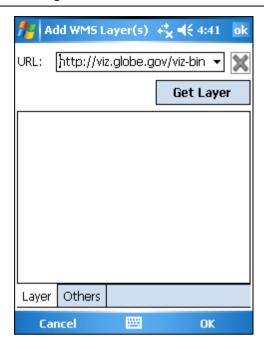
Add WMS Server

When PDA connects to Internet service, the layers published on the Internet can be added to SuperPad through this add-on. The layers published on the Internet usually are of high practical utility and through SuperPad users can swiftly connect to server and reach the layers for advanced browsing, analysis and editing.

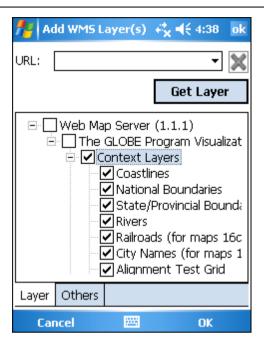
 First of all, connect PDA to the Internet, tap DataServicesToolbar button to switch to DataServicesToolbar toolbar. Tap WMS dropdown arrow and tap Add WMS Server.



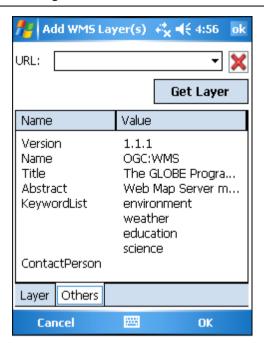
2. Type the server address in URL and tap Get Layer.



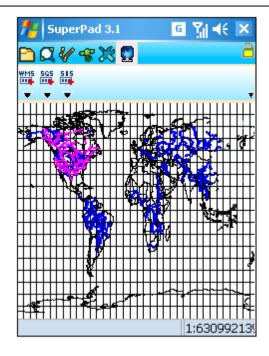
3. All of the layers distributed by the server are listed in the below part; please select the layers to display by checking.



4. Tap the Other tab and the related information about the layers will be presented in the below part. Tap **OK** and go back to the map window.



5. The map window displays the layers.



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Adding WFS Server

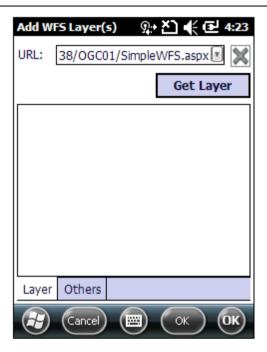


Add WFS Server

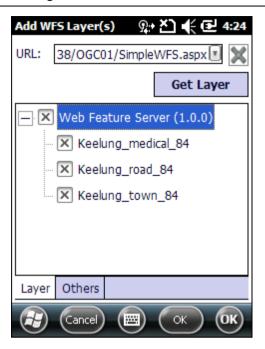
1. First of all, connect PDA to the Internet, tap DataServicesToolbar button to switch to DataServicesToolbar toolbar. Tap **WMS** dropdown arrow and tap **Add WFS Server**.



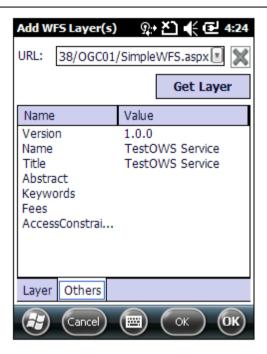
2. Type the server address in URL and tap Get Layer.



3. All of the layers distributed by the server are listed in the below part; please select the layers to display by checking.



4. Tap the "Others" tab and the related information about the layers will be presented in the below part. Tap **OK** and go back to the map window.



5. The map window displays the layers.



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SuperGIS Server



SuperGIS Server

1. Tap SGS button and select Add Data from SuperGIS Server....

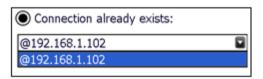


2. SuperGIS Server window shows up. It provides three ways to connect to SuperGIS Server:



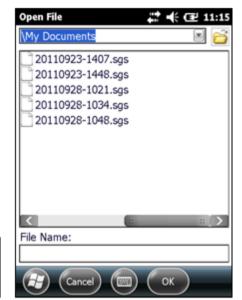
Connection already exists

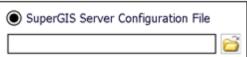
During the period of time from SuperPad is activated until it is closed, once you have connected to SuperGIS Server, you can tap the dropdown arrow to show the connection IP list and directly choose one to connect. If you have not connected to any one yet, it will be blank.



SuperGIS Server Configuration File

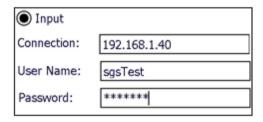
All connection records generated by activating DataServiceTool will be saved as sgs files (*.sgs) in the specified folder, and you can select a file to connect by tapping . One file records one connection, and the filename consists of the date and time of connection. For example, 20110928-1048.sgs refers to the connection at ten forty-eight on September 28th in 2011.



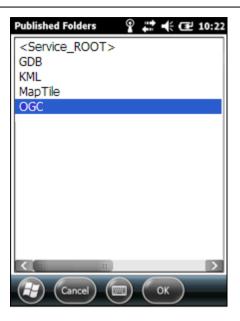


Input

If it is the first time you connect to SuperGIS Server, you will need to input the server IP, user name and password to connect.



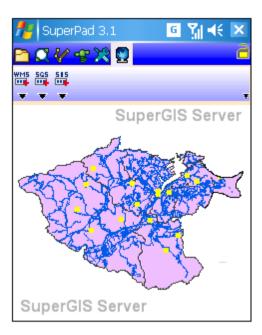
- 3. Connect SuperGIS Server window by clicking **OK**.
- 4. "Published Folders" window shows up. Please select a service to connect and click **OK**.



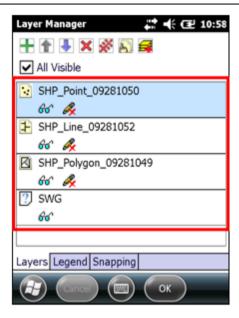
5. The maps provided by the service will be shown on the window. If the map is editable, it will be marked "Editable." Select one map and click **OK**.



6. The selected map displays on the window, and you can start to navigate.



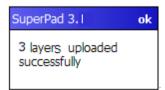
7. If you select an editable map, you can set the map service editable in **Layer Manager**, and then all the layers contained in the map service will be added to SuperPad and be downloaded to the specified folder automatically. It might take a few seconds, please be patient. After all layers show up, you can edit the layers in the same way you edit the general GIS layers.



8. After editing, if you want to update data with SuperGIS Server, please tap **Synchronize Data with SuperGIS Server**.



9. When the data is updated successfully, a message as below will show up.



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FixedZoom



FixedZoom

Provides the functions of fixed zoom in and fixed zoom out. The function keys are located at the bottom left and bottom right corners of the map. Tapping \bigcirc can perform fixed zoom in. Tapping \bigcirc can perform fixed zoom out.



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GNSS



GNSS

The add-on uses pesudorange observations measured by GPS reference stations to correct the sharing error of receiver's pesudorange observations by Pesudorange Correction(PSC). Then the corrected pesudorange observations are used to position with improved accuracy[1]. Extended Kalman Filter(EKF) is used as the solution technology to calculate the positioning, the states in solution are position, speed and time in 3-dimensional[2]. Be well noted, the GPS accuracy can be influenced by environments such as in basements, on overpasses or near-by tall buildings; the positioning accuracy could drop due to the satellite signals being shielded. To enhance product performance, used in open space or non-shield space is recommended.

- 1. Parkinson BW and Spilker J J Jr. (1996) Global Positioning System: Theory and Applications, Volume 2, John Wiley & Sons, Inc.
- Gelb A (1974) Applied Optimal Estimation, Cambridge, MA: MIT Press. ISBN: 0262570483

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Mobile Device Settings



Mobile Device Settings

Before going outside to do the survey, please make sure you have done some changes on the settings to your mobile device:

1. Navigate Settings > System.





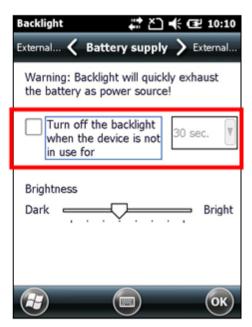
2. Tap Power, in Power page uncheck both of the boxes "Turn off device if not used for" in "On battery power" and in "On external Power."





3. Navigate Settings > System > Backlight, please uncheck the box "Turn off the backlight when the device is not in use for."





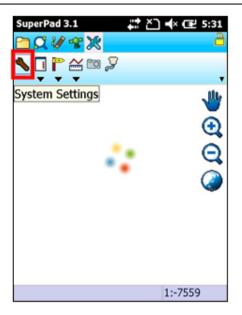
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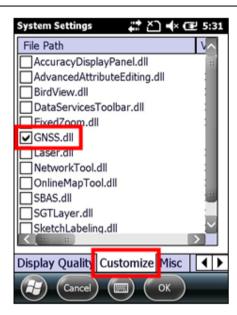
Starting to Use on Windows Mobile



Starting to Use on Windows Mobile

- 1. Launch SuperPad in Windows Mobile.
- 2. Enter System Settings, find "Customize" tab and check the box "GNSS.dll."





3. Exit SuperPad, and restart it.



4. Setup for the Spatial Reference of map: GCS WGS 1984.





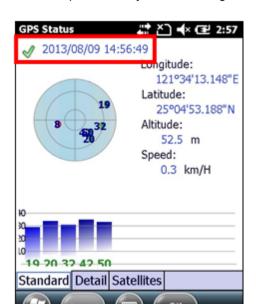
5. Switch to GPS toolbar and turn on GPS (icon will become green).





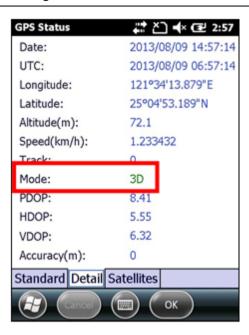
6. Check the GPS status to make sure GPS is positioned:





If the GPS is positioned, you will see a green check sign.

Tap "Detail", the GPS position mode must be in 2D or 3D.

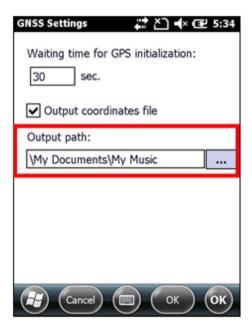


If the GPS signal is positioned and fixed, the GPS position will be shown on the map.



- 7. Switch to GNSS toolbar, and tap the wrench icon to set up for:
- (a. the waiting time before starting to record GNSS data (it counts the seconds upon the round icon mentioned in step 8 is tapped. Take the figure below as an example, 30 seconds waiting time means it starts recording in the 31 seconds as the round button is tapped)
- (b. the folder to save the RINEX and GNSS file

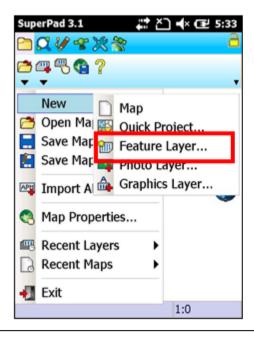


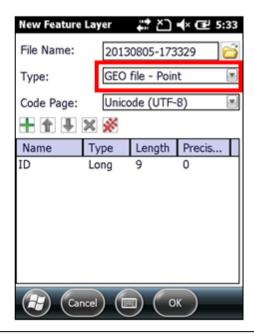


8. Tap the round icon in GNSS toolbar to enable the function. System will start recording as the icon is tapped after the waiting time set in step 7. (red: stop recording/ green: start recording).

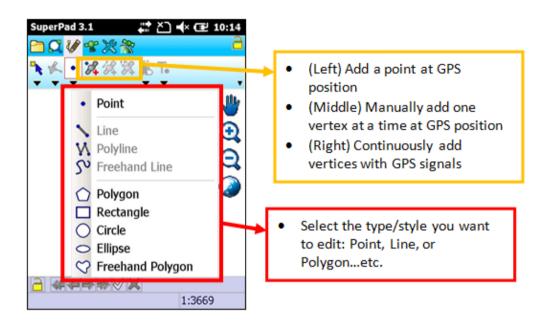


9. Add a new feature layer (point, line, or polygon in either .geo or .shp format).

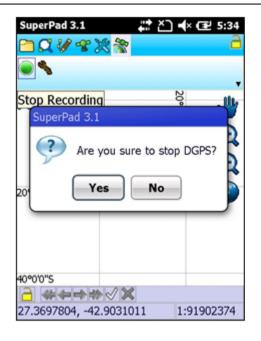




10. Switch to Edit toolbar, you may start to record the features by GPS.



11. Finish editing features, you may turn off GNSS to stop recording, and turn off GPS.





12. Finish! Bring your data/mobile device back to office.

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NTRIP



NTRIP

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Mobile Device Settings



Mobile Device Settings

Please make sure your mobile device had been link to the Internet (via cellular network or WiFi) before applying NTRIP services. Also, please make sure you have done some changes on the settings to your mobile device before starting up your field survey:

1. Navigate Settings > System.





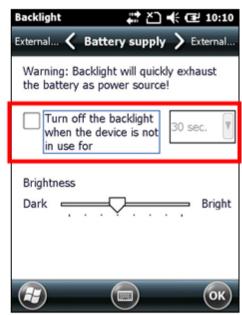
2. Tap Power, in Power page uncheck both of the boxes "Turn off device if not used for" in "On battery power" and in "On external Power."





3. Navigate Settings > System > Backlight, please uncheck the box ??Turn off the backlight when the device is not in use for.??/text>





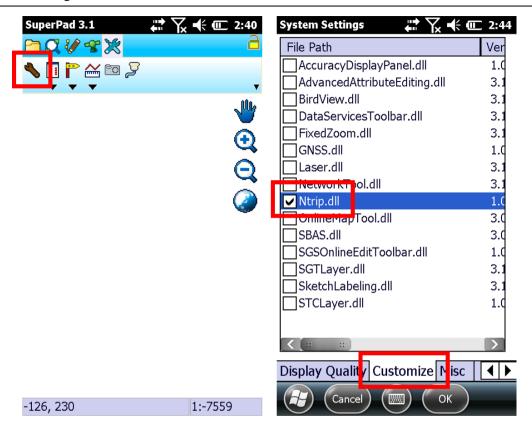
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Applying NTRIP Service



Applying NTRIP Service on Windows Mobile Platform

- 1. Open up SuperPad on your Windows Mobile device.
- 2. Enter the Customize Tab within System Settings, and check up Ntrip.dll.



3. After check up the option, please restart SuperPad to apply the settings.

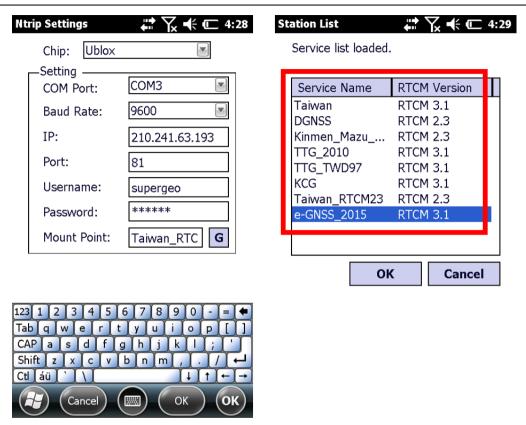


4. Now you will find the NTRIP tool had been activated. For first time using, please entering the setting page.



1:-7559

5. Entering the setting page, your can select the Chip setting within the drop down list as your mobile device's GNSS module specification. There are still some more options to fill up with, including the COM Port for sending RTCM, Baud Rate, your NTRIP Caster IP address/Port and your ID/Password. Meanwhile, user can simply press the button beside MountPoint to get the service list. Select the service you need and press OK. Please beware of the RTCM format has to be match with the GNSS module of your mobile device.



6. Finish the setting by pressing OK button and back to the main map frame. Now you can hit the NTRIP service button to active the connection. Message will be shown for indicate the connection status, and the handshake data will also been display on the HUD.





7. Now you can swap to the GPS Tool and activate the positioning function. Your current location will be shown on the main map screen, and you can also check out the HUD display on the upper left part of the screen for data transmission status and fixing quality. For more detailed information, you can entering the GPS Status tool and find out more about accuracy and deviation. You can start the data collection and data measurement when the positioning accuracy match up with your survey demands.



1:0

- 7. You can easily build up various of dataset and collect data in higher accuracy via NTRIP service.
- 8. For stopping the NTRIP service, simply just click on the NTRIP service button again. System will show up a success message after terminate the connection.





9. Now you can bring the data and mobile devices back to your office.

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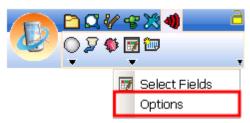
Laser

Settings



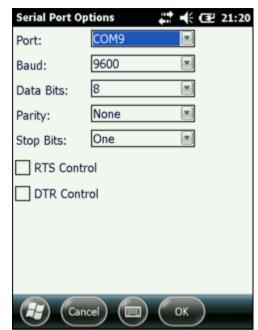
Settings

 Before starting measurement with Laser add-on, please complete the settings to connect mobile device and laser rangefinder. Firstly, tap the Select Fields drop-down menu and tap **Options**. The "Options" dialog box shows up, tap the Protocol dropdown menu and select the laser rangefinder to connect. Tap **OK**.





2. Set the connection settings. Please tap "Serial Port Options", the "Serial Port Options" dialog box shows up and set the items.

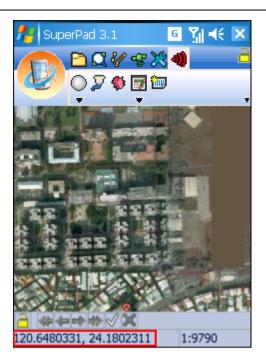




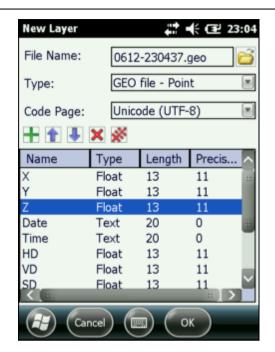
The serial port options are explained in the table below:

Name	Content	
Port	Define the serial port of the mobile device to connect to laser rangefinder.	
Baud	Define the transmission rate of laser rangefinder.	
Data Bits	The count of bit which laser rangefinder transmits data.	
Parity	The count of parity which laser rangefinder transmits data.	
Stop Bits	The last bit transmitted by laser rangefinder.	

3. Add the base map to SuperPad and set the spatial reference of each layer. Specify the map spatial reference WGS 84.



4. Create a new layer to store all the position data by tapping **New Layer**. Because the laser rangefinder measures the position by shooting one spot, the obtained measurement result belongs to one spot as well. So please create a layer of point type. Eleven attribute fields are built in the layer by the system to save the measurement results. Or you can adjust the fields according to your needs. Users can add a new field by tapping ♣. If one field is selected, users can adjust the order by tapping ♠, delete field by tapping ★ or remove all fields by tapping ★. After all the fields are created, tap **OK**.

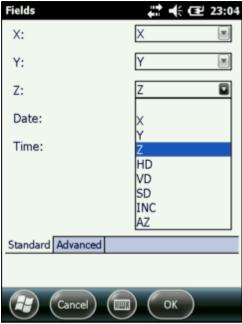


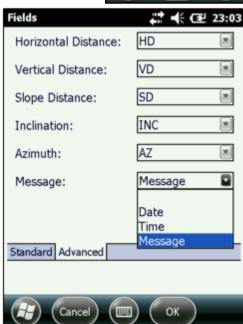


5. When a point layer is created, please tap **Select Fields** to set the measurement information to be saved in which field.



6. The "Field" dialog box shows up, there are two tabs, Standard and Advanced.





Users can decide the information in Standard tab to be saved in which attribute field

System Settings and Others

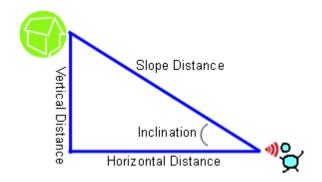
through the drop-down menu. For instance, tap the drop-down menu of Z, you can select the field Z from the field list to record the altitude information.

Info Name	Info Contents	Field
X	Longitude	Х
Υ	Latitude	Y
Z	Altitude	Z
Date	Date	Date
Time	Time	Time

Identically, the Advanced tab include the information:

Info Name	Info Contents	Field
Horizontal Distance	The horizontal distance from the measurement spot to the target.	HD
Vertical Distance	The vertical distance from the measurement spot to the target.	VD
Slope Distance	The slope distance from the measurement spot to the target.	SD
Inclination	The inclination from the measurement spot to the target.	INC
Azimuth	The azimuth from the measurement spot to the target.	AZ
Message	The original message of the laser rangefinder.	Message

Please refer to the figure below for the meanings of information in the Advanced tab. As to how the laser rangefinder calculates and measures distance, please find in your laser rangefinder manual.



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Using Laser Rangefinder



Using Laser Rangefinder

In this add-on, there are two ways to measure with laser rangefinder: <u>using GPS</u> <u>position as datum</u> and <u>setting reference point as datum</u>. With GPS position as datum, firstly GPS must be turned on to get the current GPS position, and then start to measure with laser rangefinder. The centroid information get is right the information of the spot where the laser rangefinder shoots. The other way is to take a reference point as datum, which is used when you are unable to reach the target. Through specifying a reference point and relative position, the information of the real target can be found through calculation.

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Using GPS Position as Datum



Using GPS Position as Datum

System Settings and Others

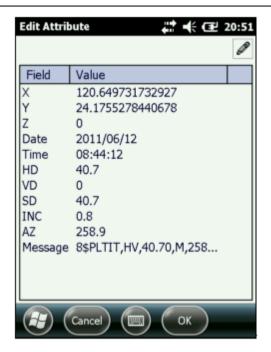
1. Turn on GPS. When you start Laser extension and the GPS is off, a message as the figure below will show up to remind you to turn on GPS.



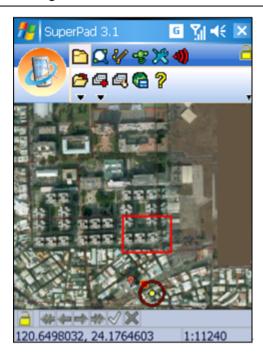
2. Tap **Get Target Position**. When the button turns green, you can start to measure with laser rangefinder.



3. Aim at the target with laser rangefinder and press the Fire button. When the measurement information is obtained successfully, "Edit Attribute" dialog box shows up and the information will be filled in the attribute table automatically. Tap **OK**.



4. Go back to the map, a point feature is added to the map where you shot the spot.



5. If you have not created a point layer before starting measurement, after you shoot a spot, a message as figure below will show up to remind you to create a point layer.



6. After you shot a spot with laser rangefinder, you may tap **Debug** and check the original signal of laser rangefinder. Through it you will know whether the mobile device connects to laser rangefinder successfully.



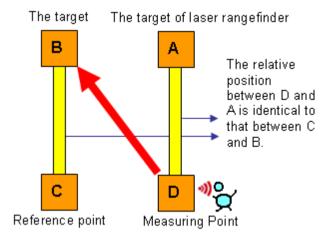


© 2015 Supergeo Technologies Inc. All Rights Reserved. Setting Reference Point as Datum

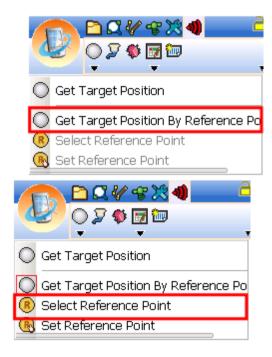


Setting Reference Point as Datum

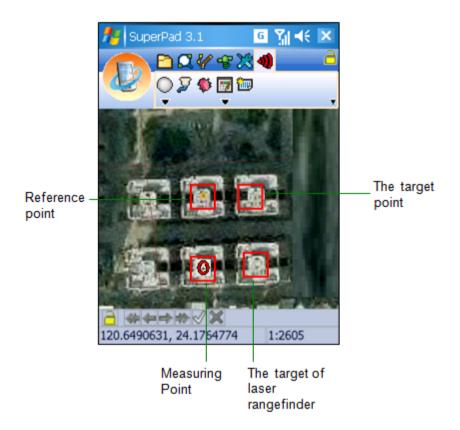
Please refer to the figure below, if a target centroid B is located where unable to measure, and the relative position between centroid C and centroid B is known identical to that between centroid D and centroid A; in that case, to get the relative position between centroid D and centroid A via laser range finder is to get that between centroid C and centroid B. After that, the position of target centroid B can be obtained by calculating with the known position data of centroid C on laser range finder. Centroid C is the reference point. Since the result is calculated by the relative position, the difference of relative position might cause that of the result.



1. Tap Get Target Position By Reference Point to set reference point. Tap "Get Target Position" drop-down menu again, when Get Target Position By Reference Point shows framed by a red square, please tap Select Reference Point and directly tap where you want to set as reference point on the map.



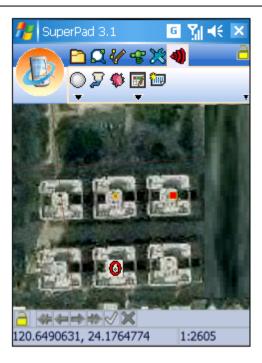
2. [®] shows up where you tap on the map, it represents the reference point. Then, aim at the relative position with laser rangefinder and press the Fire button. System will calculate and shoot a spot from datum [®] towards the identical relative position.



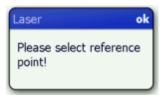
3. When the measurement result is obtained successfully by mobile device, "Edit Attribute" dialog box shows up and the attribute table will automatically be filled with results.



4. Tap **OK** to go back to the map, and the new feature will be added to the map.



5. After tapping **Get Target Position By Reference Point**, if you then start to measure without setting a reference point, a message as figure below will show up to remind you to proceed by selecting the reference point after you shoot a spot.



6. You can also enter the coordinates of the reference point manually. Firstly, tap **Set Reference Point** and the "Reference Point" dialog box shows up.



7. Enter the X,Y,Z value of the reference point. After that, tap **OK** and go back to the map and continuously proceed step 2.



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NetworkTool

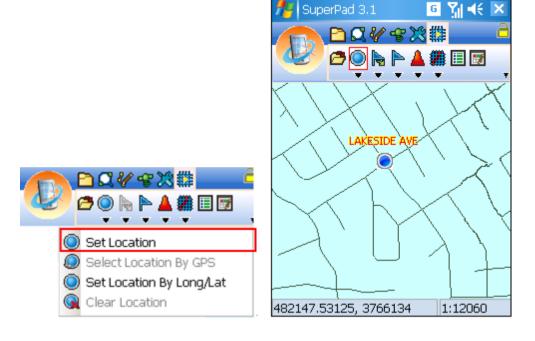


NetworkTool

It provides route planning function; through the settings of flags and barriers, the system will work out the superior route planning.

Firstly add a road layer to SuperPad. Then tap the **NetworkTool** button in the main toolbar to switch to **NetworkTool** toolbar. The system will auto-detect whether a corresponding .nrt file of the same filename exists in the folder when the road layer is added; if yes, the system will automatically add the .nrt file to SuperPad. But if the .nrt file is saved in another folder, please tap and add the .nrt file by yourself.

Select **Set Location** and tap the location on the map where you want to mark a label, and the shows up right at the position. Location is a simple label which facilitates users to find out some specific position. Only one Location exists on a map; if necessary, user can convert Location to Stop or Barrier, which will be described in the following section.



To set a Location at the current GPS position, please activate GPS first and switch to the Network Tool toolbar. Tap the **Set Location** dropdown arrow and select the **Select Location By GPS**, a Location label shows up at the current GPS position.

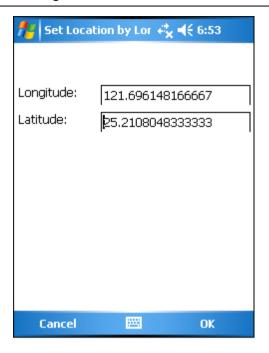


Set LocationSelect Location By GPSSet Location By Long/LatClear Location

If you want to set up the Location with longitude and latitude, please select $\bf Set\ Location\ By\ Long/Lat.$



The "Set Location by Longitude" dialog box shows up; in Longitude Latitude the values of the current GPS position are displayed. You can enter the values by yourself. After the values are entered, please tap \mathbf{OK} .



Go back to the map, a Location will be added to the position where you just set up.



If you want to clear Location, please tap Clear Location.



If you want to convert the Location to Stop, please tap **Convert To Stop**. The Location turns to Stop.



If you want to convert Location to Barrier, please tap Convert To Barrier. And Location

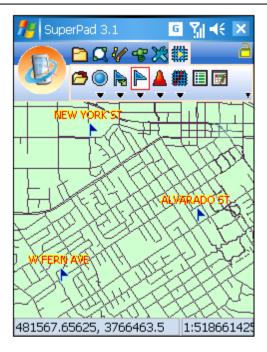
turns to Barrier.



Tap the **Add Stop** dropdown arrow and a tool menu shows up. To add stop, please tap **Add Stop**.

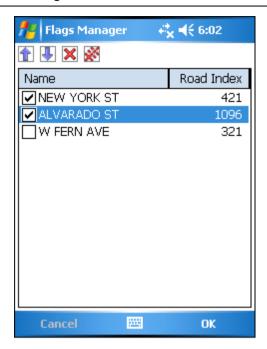


In the next, tap the position where you want to add a stop, and then a stop will be added to the map. Repeat the way to add stops till all the stops are added.



To clear all stops, please tap **Clear All Stop** on the tool menu, and then all the stops on the map will be cleared up.

To manage the stops, please tap the **Manage Stops** on the tool menu. After entering Flags Manager dialog box, you can adjust the stop order or remove it.



First of all, select the stop you want to adjust, and you will find the tools on the upper left part become enabled.

- $\hat{f r}$: the stop order is moved up by one place.
- : the stop order is moved down by one place.
- X: remove the selected stop.
- *: remove all stops.

The unchecked locations are not viewed as stops, so the system will not plan to pass the locations.

To add stops at GPS position, please activate GPS first. Then tap **Add Stop By GPS** on the tool menu.





A flag named GPS will be added at the GPS position on the map.

To add barriers, tap the **Add Barrier** dropdown arrow. When tool menu shows up, tap **Add Barrier**.

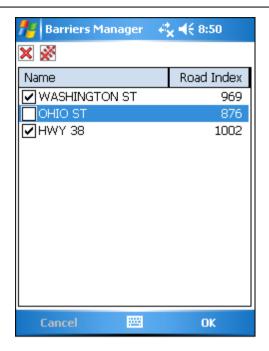


In the next, tap the location on the map where you want to add a barrier, and the barrier will be added to the map. Repeat the way to add barriers till all barriers are added to the map.



To clear all barriers, please tap Clear All Barriers.

To manage barriers, please tap **Manage Barriers**. Select a barrier you want to remove, and click to remove it. Or you can click to remove all the barriers. In route planning the unchecked barriers are not viewed as barriers to the system, so the system might plan to pass the barrier's position.

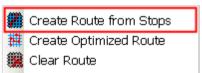


To add barrier at the GPS position, activate GPS first and tap the **Add Barrier By GPS**, and a barrier will be added to the map at current GPS position.



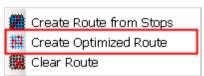
When stops and barriers are set up, tap **Create Route from Stops**, and the result will be displayed on the map.

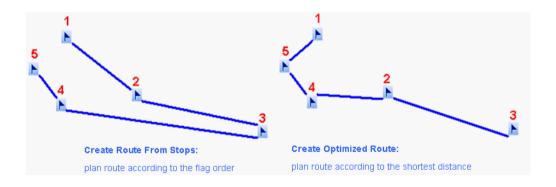




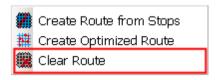
If you want to plan the shortest route, please select **Create Optimized Route**. To create the Optimized Route, the system will plan the route according to the nearest stop instead of the stop order; this method is suitable for the travel route planning. Please see the Create Route from Stops result in the previous part. The route is planned according to the specified stop order, while the figure on the right side, the Create Optimized Route result, is planned according to the nearest stop instead of the order. Therefore, it will go to the nearest stop first. Please see the figures below to tell the difference between **Create Route from Stops** and **Create Optimized Route**.



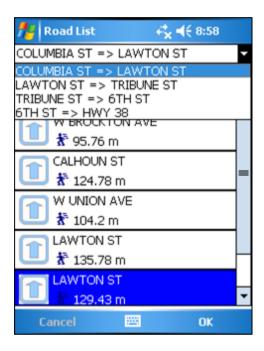




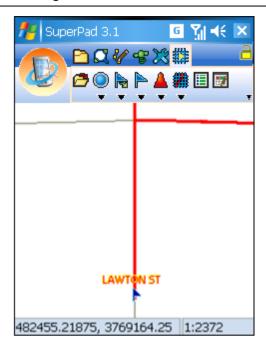
To clear the route planning, please tap **Clear Route**.



Tap **Driving Direction** and "Road List" dialog box shows up. The dropdown list in the upper part allows users to select the road section, and the detailed instructions of direction and distance are listed in the lower part. When you select a section, tap **and tap **OK**.



The map will pan to the extent of the selected road section. Please see the third figure below.



When you are approaching the destination, a message like the figure below will pop up.



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OnlineMapTool



OnlineMapTool

A variety of online maps are available to be used as the base maps with OnlineMapTool. With the add-on users are able to choose the needed online map style

to be the SuperPad basemap for further editing, query or measurement.

1. Tap Map Layer 1 to add the default Online Map Layer to the map.



2. Map Style and Zoom Level buttons now become enable, tap the Map Style downwards arrow to display the drop-down menu and tap to switch to required map style.





3. Tap Zoom Level to adjust the Online Map Layer level.





Please Note: To add Google Map to SuperPad, you need to add manually and before use it please make sure you are well understanding the conditions and treaty and have authorized from Google Map. Next, open OnlineMapToolSetting.txt which is empty from the SuperPad setup directory and write in the map styles wanted to this text file, one item in a row, such as Google Roadmap, Google Satellite, Google Terrain, Google Hybrid.

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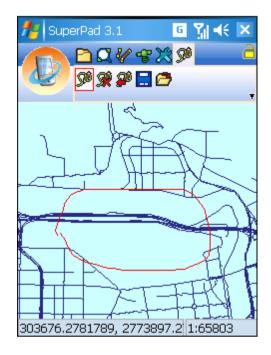
SketchLabeling



SketchLabeling

The sketch add-on can draw freehand line with stylus on the screen map as highlight or shorthand.

Tap the **Sketch** button on the main toolbar and switch to Sketch toolbar.



Tap Add Sketch button and when Add Sketch gets activated, directly draw the freehand line with stylus on the map and the freehand line will be highlighted in red color. If you want to delete freehand line, please tap Delete Sketch to clear all freehand lines, so all freehand lines will be deleted. If you want to go back to previous freehand line sketch, please tap Previous Sketch . If you want to save the file, please tap Save and it will be saved in KML file. If you want to open a file, please tap Open to open a file.

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SBAS



SBAS

This add-on will remind you with a plane icon shown on the map screen when a satellite

flies over the current GPS position.



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SGSOnlineEditToolbar



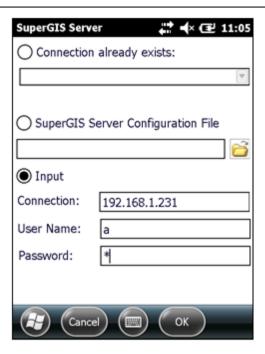
SGSOnlineEditToolbar

Users are able to online edit the editable Services published by SuperGIS Server and synchronize data with SuperGIS Server with this add-on.

 Start SuperPad, switch to SGSOnlineEditToolbar, and tap Open From SuperGIS Server.



2. Input connection info in Input. You can select an already-existing connection in Connection already exists or choose a connection Configuration file in SuperGIS Server Configuration File.

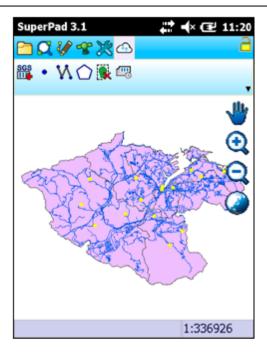


3. Tap Service_ROOT to show the Published Resources. Choose one editable service and tap OK.

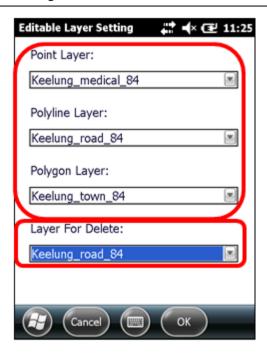


4. Return to map, the service displays on the map and now tap

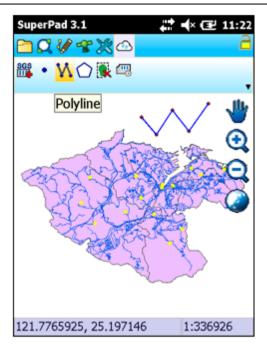
to do editable layer setting.



5. You can set one point layer, one polyline layer and one polygon layer editable, and the selected layers will be allowed to add new features. Meanwhile Layer For Delete specifies one layer to enable users to delete features on it.



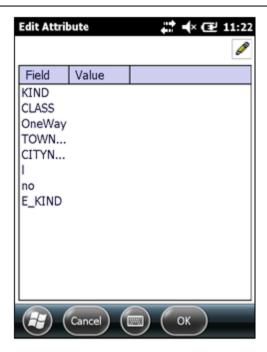
6. For instance, to add a polyline feature, you need to tap Polyline button and draw a polyline feature on map. Tap the Polyline button again as the feature is finished.



7. Tap Yes.



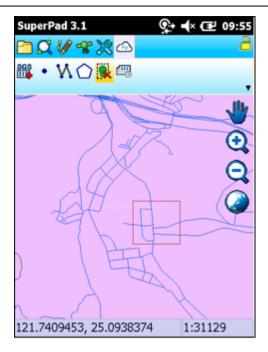
8. Enter the attribute data.



9. Return to map, the polyline feature is added up and synchronized with SuperGIS Server.



10. To delete features, the target layer must be selected in Layer For Delete on Editable Layer Setting page. Then tap Select Features to Delete button and frame the features to delete.



11. Check the features to delete and tap Yes.



12. The selected features to delete have been removed and synchronized with SuperGIS Server.



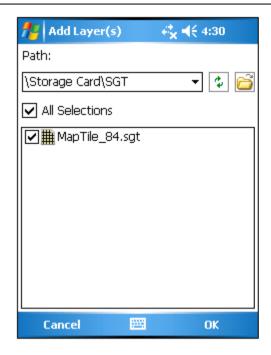
SGTLayer



SGTLayer

The SGT map tile generated by Map Tile Tool now is able to be added to SuperPad through SGTLayer add-on. Once the add-on is activated, you can read and display SGT layer by adding SGT layer to SuperPad.

About the way to generate SGT map tile please refer to Map Tile Tool user guide.





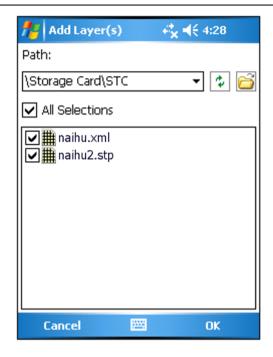
STCLayer



STCLayer

The STC map tile generated by SuperGIS Server now is able to be added to SuperPad through STCLayer add-on.

Once the add-on is activated, you can read and display STC layer by adding STC layer (both *.xml and *.stp format index file are supported) to SuperPad.





About the way to generate STC map tile please refer to SuperGIS Server user guide.

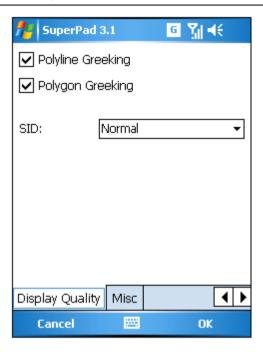
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Display Quality

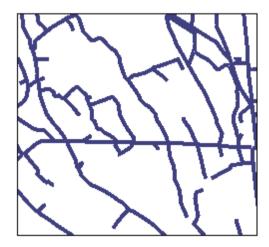


Display Quality

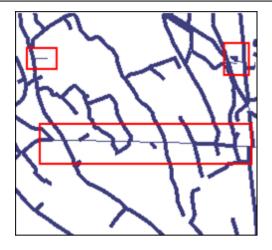
Set up whether to use "Polyline Greeking" and "Polygon Greeking." Greeking function can simplify the rendering, improving the rendering efficiency.



Polyline layer without greeking effect.



Polyline layer with greeking effect.



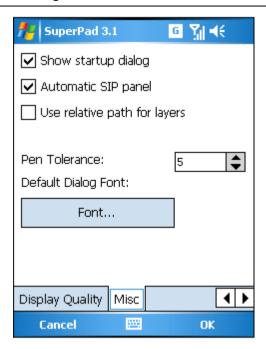
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Misc

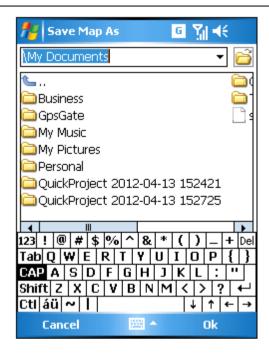


Misc

In this tab, you can set whether to "Show startup dialog" after SuperPad is activated by checking this option. If you want to use relative path for the layers, please check "Use relative path for layers."



If you check "Automatic SIP Panel", when you are tapping the field, SIP panel will show up automatically. For example, when you tap Name combo box, the SIP panel will appear automatically.



"Pen Tolerance" is the tolerance of stylus, the unit is pixel. "Default Dialog Font" can set up the font for all SuperPad dialog boxes.

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11.2 Other Tools

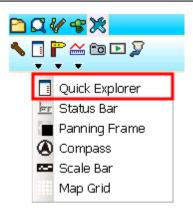
Quick Explorer Tool Menu

Quick Explorer

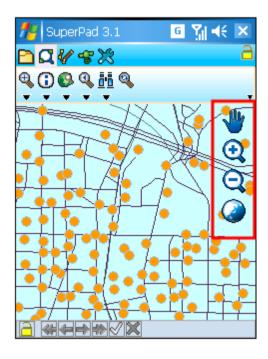


Quick Explorer

1. Tap System Settings > Quick Explorer.



2. Quick Explorer shows up. This is a set of quick tools in the left side of the window; you can directly tap the function to pan, zoom in, zoom out or zoom to full extent for one time. As an function is selected, the icon turns red, which means the function is activated. As the function is accomplished, the icon returns to blue.



Status Bar

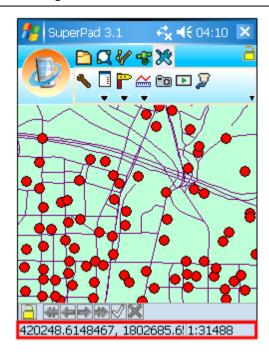


Status Bar

1. Tap "System Settings" on the main toolbar and tap **Quick Explorer > Status Bar**.



2. Please see the figure below. The map shows the status bar with coordinates at the bottom of the screen.



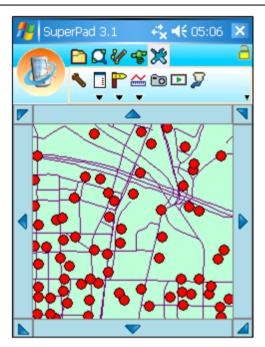
Panning Frame



Panning Frame

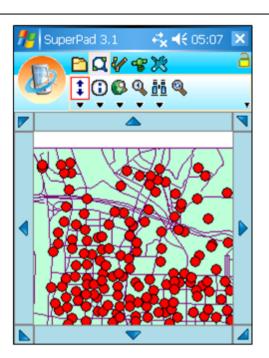
If you check this item, **Panning Frame** will show up on the map. And you will find it is framed with many arrows around the map. As long as you tap the arrow with stylus (or mouse) where you want to move, the viewshed will pan to the direction that arrow indicates. If you simply tap the arrow once, the map will pan 1/3 of the screen range. See the figure below; if you keep pressing the arrow, the map will be panned slightly continuously.





<u>Slide Zoom</u> can also be applied together with it, so you can zoom and pan together on the map without switching toolbars to select tools and run the behaviors respectively. Thus, the browsing can work more rapidly.



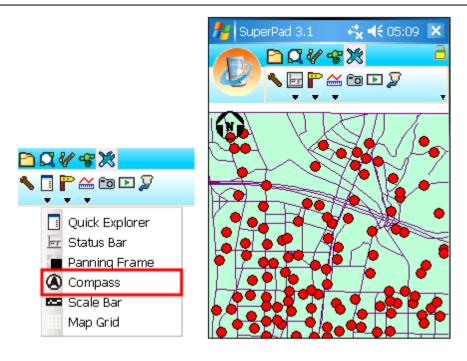


Compass



Compass

If you check **Compass**, the compass will show up on the map. If not, it will be hidden.

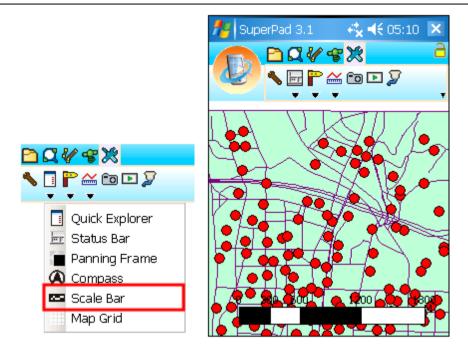


Scale Bar



Scale Bar

If you tap Scale Bar, the scale bar will show on the map. If not, it will be hidden.

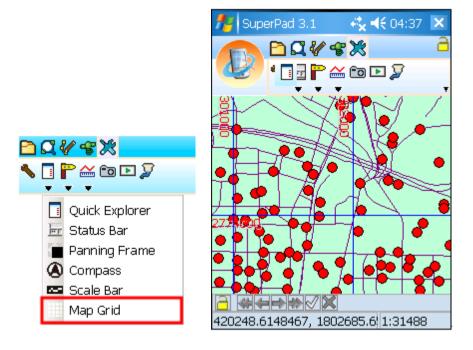


Map Grid

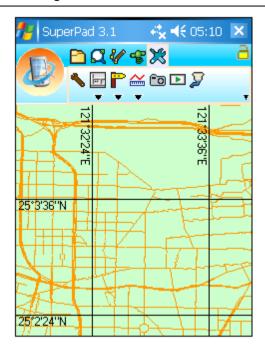


Map Grid

If you tap Map Grid, map grid shows on the map. If not, it will be hidden.



The label format of map grid will be changed according to the spatial reference of the map. If the spatial reference is set in Projected Coordinate System, the map grid will be labeled in numeric, whose unit is meter, like figure above. If the map is set in Geographic Coordinate System, the map grid will be labeled with latitude and longitude, see the figure below.



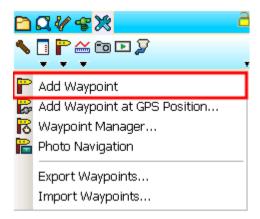
Add Waypoint Tool Menu

Add Waypoint

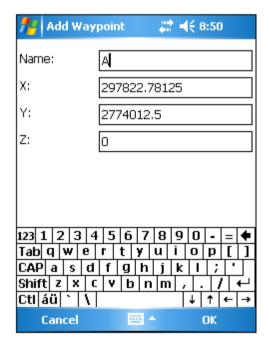


Add Waypoint

1. Tap the System Settings button on the main toolbar, switch to System Settings toolbar, tap **Add Waypoint**. Then tap at the position where you want to add waypoint with stylus (or mouse). "Add Waypoint" dialog box shows up.



2. Input the Name of waypoint and its X, Y and Z values will be automatically shown or you can change the values. Then tap **OK**.



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Add Waypoint at GPS Position



Add Waypoint at GPS Position

The function will add a waypoint at GPS position. Please make sure the GPS function is activated in SuperPad.

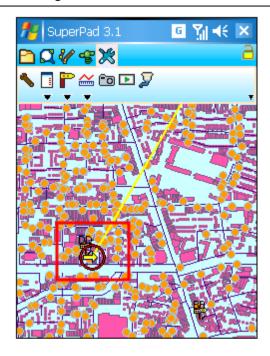
 When GPS reaches the position you want to set waypoint, tap the System Settings button on the main toolbar, switch to System Settings toolbar and tap the dropdown arrow of <u>Add Waypoint</u> > Add Waypoint at GPS Position.



"Add Waypoint" dialog box shows up. Input the Name for the waypoint and X, Y and Z values will be input automatically according to the GPS position or you can change on your own. Then tap OK.



3. Back to the map, the waypoint is added to the map.

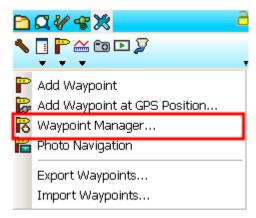


Waypoint Manager

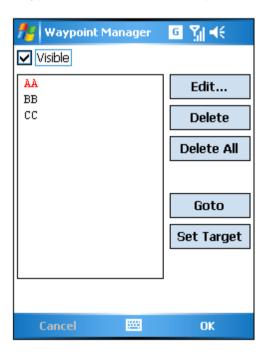


Waypoint Manager

1. Tap the dropdown arrow of **Add Waypoint** > **Waypoint Manager**.



2. All waypoints will be listed here. You can select the one you want to edit. When the waypoint is in selected status, tap a function button on the right side to use.



Name	Description

System Settings and Others

Edit	"Add Waypoint" dialog box shows up and you can begin to edit.
Go to	Move the selected waypoint to the map center.
Set Target	The selected waypoint marked with check indicates that this is the target GPS is going to.
Delete	Delete the selected waypoint.
Delete All	Delete all waypoints.
Visible	Check it and waypoint mark shows up on the map; if not, it disappears.

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Photo Navigation

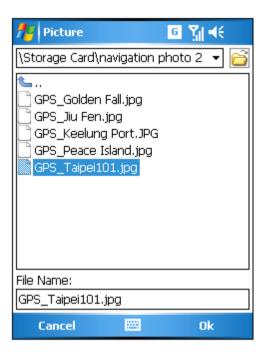


Photo Navigation

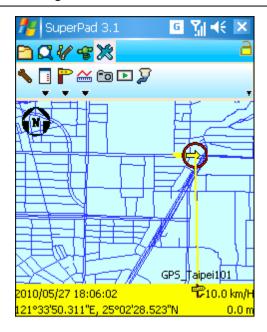
1. Tap the dropdown arrow of the **Add Waypoint** > **Photo Navigation**.



2. The "Open File" dialog box appears, please specify a photo with coordinates for navigation.



3. Go back to the map, and the system automatically sets the photo's position as waypoint on the map. If GPS is activated, it will navigate to the position of the photo's position.



Import/Export Waypoints



Import/Export Waypoints

1. Tap the dropdown arrow of Add Waypoint and tap Import Waypoints or Export Waypoints to import or export waypoints. To export waypoints, the waypoints will be saved in *.geo file. To import waypoints, you will need to open the file.



NOTE: "Waypoint Manager" dialog box can be opened through the way mentioned above or you can open it through GPS toolbar > GPS Position Information > Waypoint.

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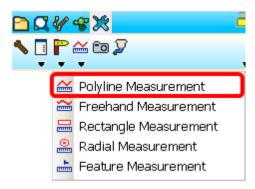
Polyline Measurement Tool Menu

Polyline Measurement

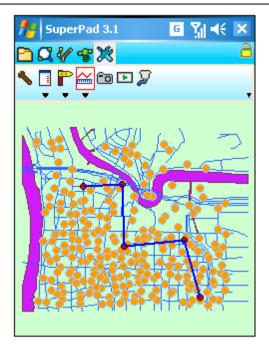


Polyline Measurement

1. Tap the System Settings button on the main toolbar, switch to System Settings toolbar, tap **Polyline Measurement**.



2. Then draw a polyline that you want to measure on the map with stylus by tapping on the position where you want to add a turn point and repeat. A red point appears on the first tap then a blue line appears to connect the first and second point after the second tap; after the third tap, a blue line shows up to connect the second and third point and so on. After you tap the last point, tap **Polyline Measure** button again to finish sketching polyline.



3. "Measure Result" dialog box shows up, it offers information including:

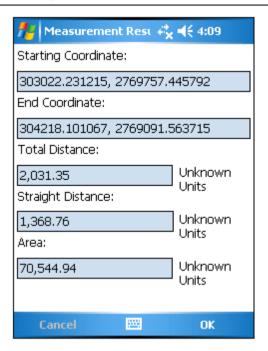
Starting Coordinate: the first sketching point. **End Coordinate:** the last sketching point.

Total Distance: total distance from the start coordinate to end the coordinate.

Straight Distance: the straight distance from start to end point.

Area: the area of the closed area that is made by connecting polyline's start and end

points.



4. Tap **OK** to close this dialog box.

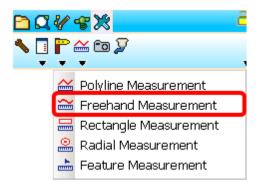
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Freehand Measurement



Freehand Measurement

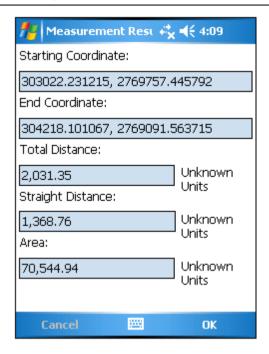
 Tap the System Settings button on the main toolbar, switch to System Settings toolbar, tap the dropdown arrow of <u>Polyline Measurement</u> > <u>Freehand</u> <u>Measurement</u>.



2. Drag the trail that you want to measure with the stylus (or mouse) on the map. When the stylus (or mouse) leaves the map, the line sketching is stopped.



3. "Measure Result" dialog box shows up, and the results are listed here. Tap **OK** to close the dialog.



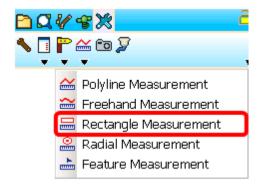
Rectangle Measurement



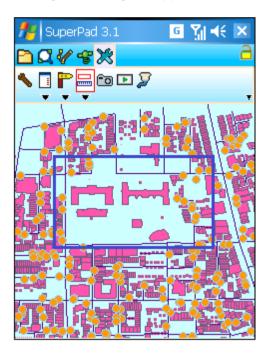
Rectangle Measurement

Rectangle Measurement allows you to measure by sketching a rectangle on the map.

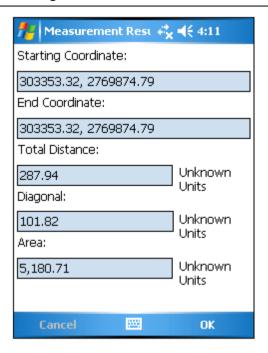
 Tap the System Settings button on the main toolbar, switch to System Settings toolbar, tap the dropdown arrow of <u>Polyline Measurement</u> > <u>Rectangle</u> <u>Measurement</u>.



2. Drag a rectangle on the map. When the stylus (or mouse) leaves the map, the rectangle sketching is stopped.



3. "Measure Result" dialog box appears and the results are listed here. Tap **OK** to close the dialog box.



Radial Measurement



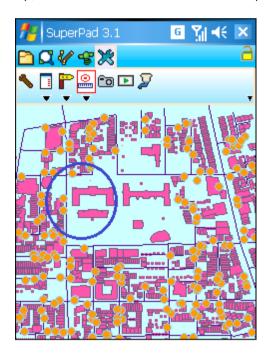
Radial Measurement

 Tap the System Settings button on the main toolbar, switch to System Settings toolbar, tap the dropdown arrow of <u>Polyline Measurement</u> > <u>Radial Measurement</u>

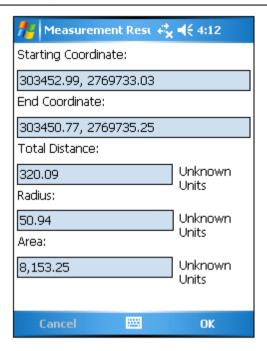
506



2. Drag a circle with stylus, the center of the circle is the start point. When the stylus leaves the map, the circle sketching is stopped. "Measure Result" dialog box shows up, various measure results are listed. Tap **OK** to close the dialog box.



3. "Measure Result" dialog box shows up, various measure results are listed. Tap **OK** to close the dialog box.



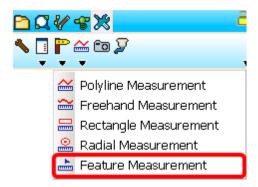
Feature Measurement



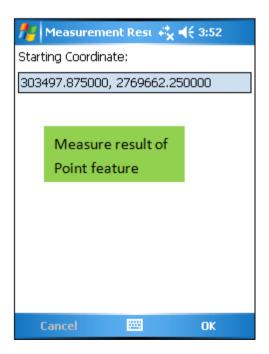
Feature Measurement

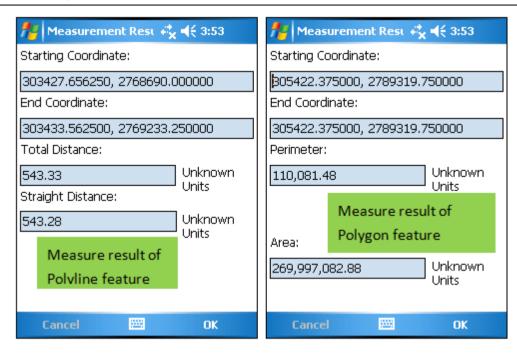
Feature Measurement allows users to get measurement result by tapping straightly on features on the map.

1. Tap System Settings and switch to System Settings toolbar. Tap the downwards arrow of Polyline Measurement and select Feature Measurement on the menu.



2. Tap straightly on the feature you want to measure and the result shows up. Different results show up, which depends on the feature type in point or line or polygon.





Camera



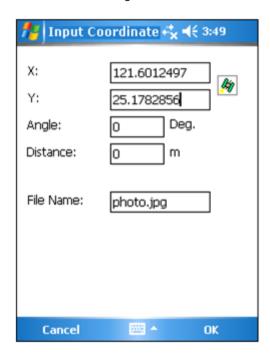
Camera

You can only use this function if the smart device is equipped with camera function. Activating this function can directly activate the camera function in smart device through SuperPad. With GPS positioning function, the coordinates of the place you take pictures can be saved to the picture file or can be used to generate photo layers. In the next, we are to take PDA as an example to explain the use.

Tap the System Settings button on the main toolbar, switch to System Settings toolbar, tap **Camera** and PDA will enter the camera mode.



After the picture is taken, "Input Coordinate" dialog box shows up. If GPS is activated, the system will input the coordinate values automatically or you can tap to input the current GPS position. Besides, in Angle, you can input the angle between you and the target, taking the north of the target as 0 degree to gain the angle; in Distance input the distance between you and the target. After that, you can use the four values of coordinate values, angle and distance between you and the target to estimate the coordinates of the target.



After the data is input, tap **OK**. The picture file will be stored in the folder you set in System Settings > <u>Camera</u> tab > Default Picture Folder.

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Run Script



Run Script

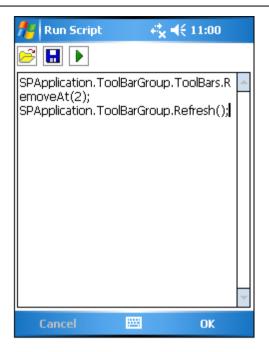
Run Script can customize SuperPad function, which enables users to directly write code; moreover, once the codes are run, the function can be executed.

However what is the difference between **Run Script** and the projects or extensions generated by SuperGIS Mobile Engine? SuperGIS Mobile Engine is a tool to generate a set of complete project or extension, which includes the custom interface design, encoding and map control. As the project or extension is loaded to SuperPad, users must restart SuperPad to take the function into effect. But as to **Run Script**, you can directly write codes on SuperPad, and the function of script can be executed when the script runs. Compared to the completeness of extension created by SuperGIS Mobile Engine, **Run Script** is the tool acting as a good assistant to write codes for smaller function in customizing light, flexible and simple custom functions. For example, as you are manipulating SuperPad and you do not need Editing function for the current project, you can write a script of hiding Edit toolbar, save this script and activate it as needed. Besides, you can also use **Run Script** to write the same function as what SuperGIS Mobile Engine could do, but the aim of **Run Script** is to write the small function excluded in SuperPad for immediate use. The convenience and promptness are the key features of **Run Script**.

Directly click **Run Script** of the System Settings toolbar.



After entering the dialog box as the figure below, you can start to write script.



After the script is done, click Run . If the script runs successfully, the function can be activated immediately. You can also save the script as a new file, so next time you can open it and run the script. The executed script will be closed as you exit SuperPad. So, next time you start SuperPad, you need to run the script again to activate it.

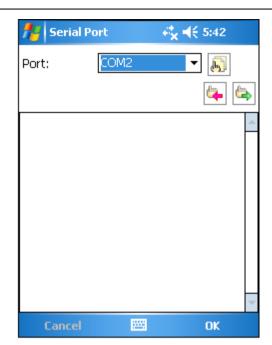
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Serial Port



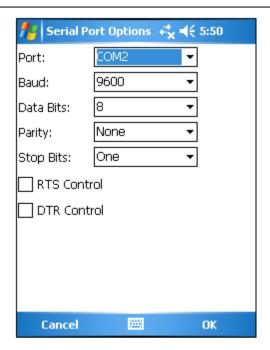
Serial Port

Serial Port can be used to input or output messages of GPS receiver, and the message will be displayed at the bottom.

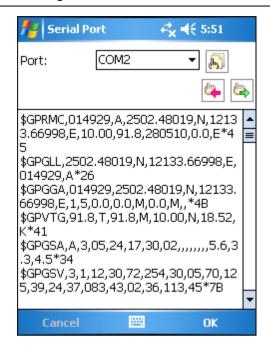




Firstly set up the various parameters of GPS receiver, tap and enter "Serial Port Options" dialog box. In "Serial Port Options" dialog box, set up the various parameters according to your need.



After the settings are finished, go back to "Serial Port" dialog box, tap to input the messages from GPS receiver, and they will be displayed on the bottom square. Or you can tap to output the messages that you type on the bottom of square to GPS receiver.



Lock



Lock

Remember the <u>Lock</u> function of the <u>Smart Editing Bar</u>? As the function is selected, the map window will be locked and will not be able to be modified. This function is to avoid incorrect editing caused by carelessly touching other function keys in the editing process. However, it can work only together with <u>Smart Editing Bar</u> when the layer is in editable status. Now, an independent **Lock** function is designed on the map window for users to use any time.

Tap the unlocked icon $\stackrel{\frown}{=}$ at the upper right corner of the map window; as it becomes locked $\stackrel{\frown}{=}$, the entire map window becomes locked. To cancel the locked status and back to general manipulation, please tap the locked icon $\stackrel{\frown}{=}$. As it becomes unlocked

a, the map window is back to enabled status.



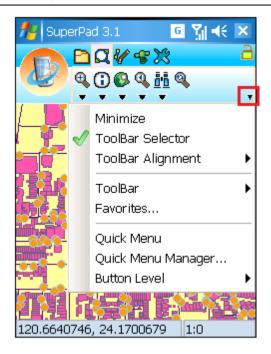
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Options



Options

This menu is located on the right side of the second tier toolbar. Tap the dropdown arrow and the menu shows up. Many express toolbar associated options are listed on it, and now we are to introduce them one by one.

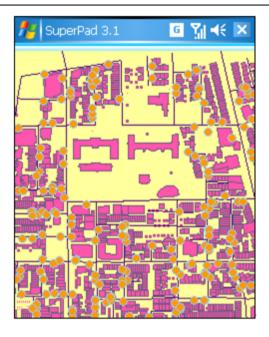


Minimize



Minimize

The toolbar can be minimized to make the map window neater.



To show the toolbar, please tap the minimized toolbar area and the **Maximize** item shows up. Tap **Maximize** and the toolbar will show.



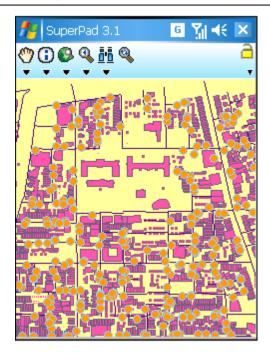
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ToolBar Selector



ToolBar Selector

If this item is not checked, the first tier toolbar group will be hidden.



To show the first tier toolbar, please check it. The default is checked.

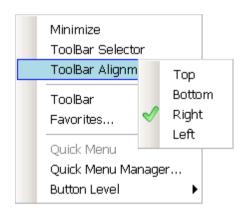
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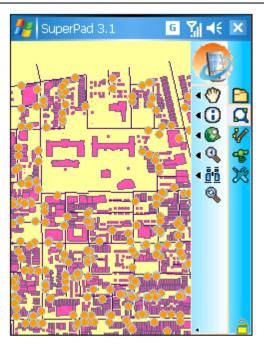
ToolBar Alignment



ToolBar Alignment

Toolbar is able to be aligned top, bottom, right, or left. The figure below is the example that aligns right.



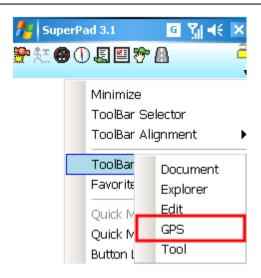


ToolBar



ToolBar

If you have hidden **ToolBar Selector**, you can switch to the needed toolbar group through ToolBar list.

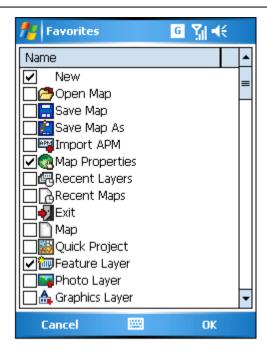


Favorites



Favorites...

Tap **Favorites** and enter "Favorites" dialog box. Check the items you want to add to Favorites then tap **OK**.



Go back to the map window, tap **Favorites** in the form of star icon and the checked items will be added to the corresponding second tier toolbar.



If you want to cancel **Favorites**, go to "Favorites" dialog box and uncheck all the items.

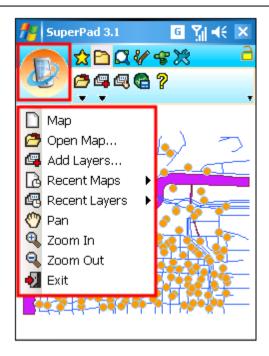
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Quick Menu



Quick Menu

Check **Quick Menu** and **Quick Menu** will be added to the left side of toolbar. Tap the icon of **Quick Menu** and the menu shows up.

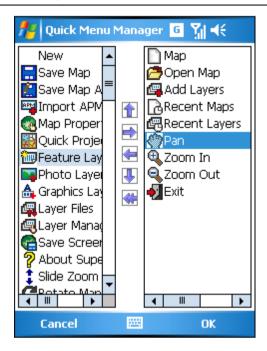


Quick Menu Manager



Quick Menu Manager

Quick Menu Manager can set up the functions given to **Quick Menu**. Tap **Quick Menu Manager** and enter "Quick Menu" dialog box. The left column shows all function items which are able to be added to **Quick Menu**; the right column shows the items which are added in **Quick Menu**. And the up and down arrows located in the middle are used to adjust the order of the items in the right column, while the right and left arrows are used to move the selected item to the left or right column.



To hide the **Quick Menu**, just uncheck it on the **Options**.

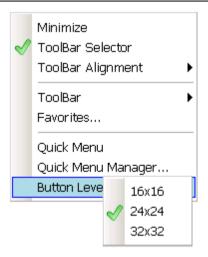
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Button Level

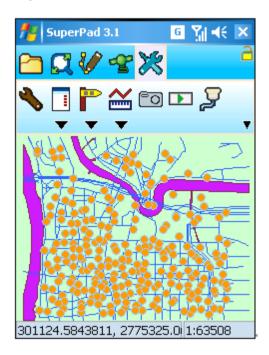


Button Level

The button level can be set, the default is 16x16.



The figure below is level 24x24.



Chapter



12 System Requirements



System Requirements

Operating System for Desktop Computer

- Windows 7 (32 bit)
- Windows 2000 Service Pack 4
- Windows Vista
- Windows XP

Operating System for Smart Device

- Windows Mobile Software for Pocket PC 2003
- Windows Mobile 5.0 for Pocket PC and Smartphone
- Windows Mobile 2003 SE software for Pocket PC
- Windows Mobile 5.x/6.x
- Windows CE .NET 5.0 or higher

Synchronization Environment

- Microsoft ActiveSync 4.2 or higher
- Windows Mobile Device Center 6.1 or higher (for Microsoft Vista or higher)

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Chapter



13 Supported Format



Supported Format

Map File

filename.SPP (*.spp): Map file for SuperPad 3.3. filename.SWG (*.swg): Map file for SuperWebGIS.

filename.SPM (*.spm): SuperPad 3.3 can only read map file of SuperPad 2, but cannot

save in this format.

Layer File

filename.SLR (*.slr): Layer file for SuperPad and SuperGIS.

Layer Format

The supported format in SuperPad includes:

Feature Layer

filename.GEO (*.geo)

filename.SHP (*.shp, ESRI Shapefiles)

filename.DXF (*.dxf, AutoCAD Drawing Exchange Format)

Projection File

filename.PRJ (*.pri): Sometimes it is accompanied with GEO or Shapefile

Raster File

The supported image layer file:

filename.SID (*.sid, MrSID image file)

filename.JPG (*.jpg, JPEG format, a raster file format of JPEG Committee)

filename. ECW (*.ecw, ER Mapper Compressed Wavelet imagery format)

filename.SGR (*.sgr, SuperGIS Raster format)

filename. GeoTiff (*.tiff)

filename.JPEG 2000 (*.ipeg)

filename.BMP (*.bmp)

filename.GIF (*.gif)

filename.PNG (*.png)

filename.LAN (*.lan)

Dynamic Photo Layer Format

filename.sph (*.sph)

Graphics Layer Format

filename.spg (*.spg, SuperPad Graphics Layer file)

Symbol Format

Supported Picture Symbol file:

filename.GIF (*.gif, Compuserves' Graphics Interchange Format)

filename.PNG (*.png, Portable Network Graphics)

filename.BMP (*.bmp, OS/2 or Win graphics format, BitMap Picture)

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Chapter



14 Toolbars

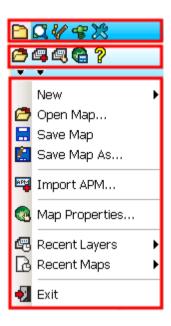


Toolbars

SuperPad 3.3 has developed Three-tier toolbar, which allows users to switch to different toolbars according to different properties, such as map/layer, explorer, edit, and GPS and Internet service. Toolbar displayed in this way is much clearer and makes the screen have more space to display the map. The manipulation efficiency can be improved significantly.

Three-tier Toolbar

The toolbars developed in SuperPad can be explained in three-tier style.



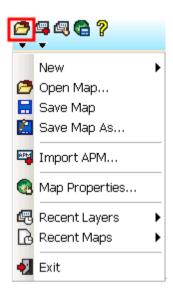
Main toolbar: the largest class and the top tier, it has six buttons including map/layer button, explorer button, edit button, GPS button and system settings button. The five buttons are located in the first row of the tools.

Toolbar: the toolbar is corresponding to the selected button on the main tool. It is

located in the second row of the tools.

Tool menu: when the downward arrow of the toolbar is tapped, the tool menu shows up.

Map/Layer Toolbar Open Map Tool Menu



New

Create a new map file, quick project, feature layer, photo layer and graphics layer.

Open Map 🗁

Open the map file, the format is SPP (*.spp).

Save Map

Save the current map file, the format is SPP (*.spp).

Save Map as 🖺

Save the current map as a new file, the format is SPP (*.spp).

Import APM 🚟

Import ArcPad map file, the format is APM (*.apm).

Map Properties 🔕

Edit map title, command and spatial reference.

Recent Layers 🕮

Open the layers you recently opened .

Recent Maps 🖟

Open the maps you recently opened.

Toolbars



Exit SuperPad.

New Layer Tool Menu



Add Layers 4

Add one or more layers to the map.

Layer Files 🖷

Tap the rightward arrow and the list shows up; you can select to import or export layer files.

Import Layer Files

Import *.slr layer file to the map.

Export Layer Files

Export layer's information to *.slr layer file.

Layer Manager 🕮

Layer Manager shows up and you can change the related properties and contents of layer.

Save Screen @

Save the current map in image file in *.bmp, *.jpg, *.gif or *.png.

About SuperPad Tool Menu



About SuperPad ?

Show SuperPad program version and copyright.

Quick Reference (for PC version) 😲



A quick reference for all tools.

User Guide (for PC version) Online SuperPad user guide.

Explorer Toolbar Zoom In Tool Menu



Zoon In 🔍

Zoom in the selected area.

Zoom Out 🥄

Zoom out the selected area.

Pan 🖑

Pan the map.

Slide Zoom 🖡

Slide upward or downward with finger or stylus to zoom in or zoom out the map.

Rotate Map 🧲

Rotate the map, adjusting PDA upward direction as the heading direction.

Clear Rotation 🕝

Clear rotating map, recover to taking PDA upward direction as the north.

Identify Tool Menu



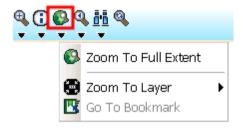
Identify 🛈

Query attribute of the feature by selecting with stylus.

Hyperlink P

Display website or file set as the hyperlink.

Zoom to Full Extent Tool Menu



Zoom to Full Extent 🚱

Zoom to cover all layers.

Zoom to Layer 😹

Zoom to cover the entire range of selected layer.

Go to Bookmark 🝱

Move map to the selected bookmark.

Go Back to Previous Extent Tool Menu



Go Back to Previous Extent 4



View the previous map extent.

Go to Next Extent 4



View the next map extent.

Find Tool Menu



Find

Input the filtering conditions to search features.

Create Bookmark

Create a bookmark of the current map extent.

Bookmark Manager 🛂

Edit or delete the bookmarks.

Refresh 9

Redraw the map.

Edit Toolbar Select Feature Tool Menu



Select Feature 🦄

Select a feature to edit.

Select at GPS Position 🌯

Select a feature to edit at GPS position.

Clear Edit Selection 🆄

Clear the edit selection status.

Zoom to Selected Feature

Zoom the map to the extent of selected feature that you want to edit.

Move to Selected Feature

Move the map to the extent of selected feature that you want to edit.

Repeated Attribute

Copy the attributes of the previous created feature to the new feature.

Vertex Edit Tool Menu



Vertex Edit 🐇

Switch to the vertex edit mode.

Move Vertex [™]

Move one vertex.

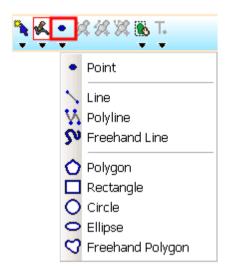
Insert Vertex 📤

Insert a vertex between two vertices.

Segment Polyline

Digitize vertex continuously after the last vertex of a polyline.

Add Feature Tool Menu



Point •

Add a point feature.

Line \

Add a line feature.

Polyline 🐪

Add a polyline feature.

Freehand Line 🤊

Add a freehand line feature.

Polygon 🔿

Add a polygon feature.

Rectangle

Add a rectangle feature.



Toolbars

Add a circle feature.

Ellipse 🗢

Add an ellipse feature.

Freehand Polygon

Add a freehand polygon feature.

Capture Point Using GPS Tool



Capture Point Using GPS 🎉

Capture GPS position as a point and make it a point feature.

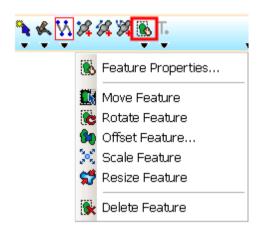
Add GPS Vertex 🚜

Capture GPS position as a point and make it a vertex.

Add GPS Vertices Continuously 🎉

Continuously capture GPS position as points and make them vertices.

Feature Properties Tool Menu



Feature Properties 🔊

Edit the properties of feature of graphics layer.

Move Feature 🍱

Drag feature to the desired position.

Rotate Feature 📚

Rotate the entire feature.

Offset Feature

Offset the selected feature.

Scale Feature 🎉

Scale feature with the feature; s center as standard.

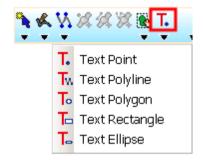
Resize Feature 📅

Resize the width or height of feature.

Delete Feature 🗽

Delete the selected feature.

Feature Properties Tool Menu



Text Point T.

Create text point.

Text Polyline T

Create text polyline.

Text Polygon To

Create text polygon.

Text Rectangle T

Create text rectangle.

Text Ellipse T

Create text ellipse.

GPS Toolbar



Turn On/Off GPS 🔭 👺



Toolbars

Turn on/off GPS.

Tracklog Record 👯

When GPS is activated, record the tracklog.

GPS Status 🔀

Show GPS Status.

GPS Position Information (1)

Show GPS Navigation information.

GPS Debug 🞚

Show GPS signal information.

GPS Options

The related GPS settings.

Pan to GPS 🔭

Pan map to GPS position.

GPS Navigation Mode

Switch to GPS navigation mode and head to waypoint.

System Settings Toolbar



System Settings 🦠

Set the system parameters with eight tabs.

Quick Explorer Tool Menu



Quick Explorer

Whether to show quick explorer.

Status Bar 🔤

Whether to show status bar.

Panning Frame

Whether to show the panning frame.

Compass 🕙

Whether to show the compass.

Scale Bar 🖼

Whether to show the scale bar.

Map Grid **Ⅲ**

Whether to show the map grid.

Add Waypoint Tool Menu



Add Waypoint P

Add waypoint, edit the name and coordinates.

Add Waypoint at GPS position 🔓

Capture the GPS position and make it a waypoint.

Waypoint Manager 🕏

Edit or delete waypoint; set the waypoint as destination; or position the waypoint at the map center.

Photo Navigation

Open the photo that equipped with coordinates and system will take the coordinates as the waypoint to start navigation.

Export Waypoints

Export waypoint file as *.geo file.

Import Waypoints

Import waypoint file.

Polyline Measure Tool Menu



Polyline Measurement 🚟

Measure by drawing a polyline and the results will show up.

Freehand Measurement 🚟

Measure by drawing a freehand line and the results will show up.

Rectangle Measurement ==

Measure by drawing a rectangle and the results will show up.

Radial Measurement 🏯

Measure by drawing a circle and the results will show up.

Feature Measurement 📥

Tap straightly on features to measure them.

Camera 🛅

Turn on the camera function of PDA.

Run Script 🖭

Write Script or load and run script file.

Serial Port 🔑

To input message to GPS receiver or output messages from GPS receiver.

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Chapter



15 How to develop SuperPad?



How to develop SuperPad?

In SuperPad, most functions are the toolbar buttons that SuperGIS Mobile Engine provides. Besides, users can customize the needed toolbar buttons as required on their own. Before designing the custom toolbar buttons, we need to understand the major classes first, so we suggest you learn the basic concept of programming language.

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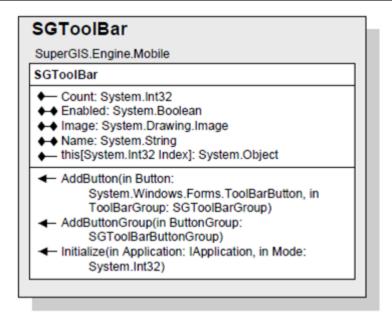
15.1 Class



Class

SGToolBar

In SGToolBar class, you can add several toolbar buttons or toolbar button groups (SGToolBarButtonGroup) and set the image of the toolbar you would like to display in the main toolbar of the SuperPad through the Image property.

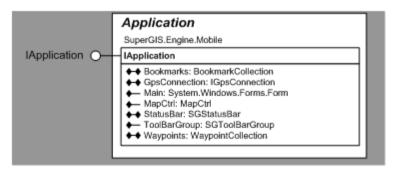


The SGToolBar is an abstract class of which most of the methods and properties have been implemented. If you would like to utilize the SGToolBar class to design a toolbar and add it to SuperPad, you have to add a new class which inherits the SGToolBar and implement the Initialize method. Thus, you can add the new toolbar to the SGToolBarGroup. Take the following codes for example. (You can also create the code through the Visual Studio template wizard, we will introduce the steps in next section.)

```
public class MyToolBar : SuperGIS.Engine.Mobile.SGToolBar
{
    public override bool Initialize(IApplication Application, int Mode)
    {
        //Implement your Initialize method here.
        return true;
    }
}
```

In implementing the Initialize method, you have to add two parameters, Application and Mode. The Application includes basic objects which a GIS application needs, such as map controls, GPS connection objects, waypoint set, and status bar, etc. These objects facilitate you to initialize the SGToolBar designed by yourself and to gain the needed objects at the same time. The Mode is applied to set the pattern of toolbars; you can judge in initializing to make the toolbars you design provide different functions

according to the needs.



The Application object contains the basic objects which a GIS application needs

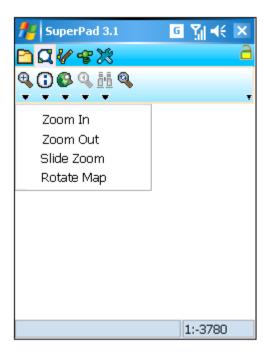
• SGToolBarButtonGroup

SGToolBarButtonGroup SuperGIS.Engine.Mobile \$GToolBarButtonGroup ◆ ActiveButtonIndex: System.Int32 Buttons: System.Windows.Forms.ToolBarButton[] ♦ Caption: System.String ♦ Handler: System.EventHandler ♦ ImageList: System.Windows.Forms.ImageList ♦-♦ IsChangeActiveButton: System.Boolean ← Labels: System.String[] ◆ Menu: System.Windows.Forms.ContextMenu ◆ ◆ TargetMapCtrl: MapCtrl ◆ ToolBar: System.Windows.Forms.ToolBar ♦ Visible: System.Boolean CreateGroup(in menu: System.Windows.Form.ContextMenu. in textArray: System.String[], in buttonArray: System.Windows.Form.ToolBarButton[], in imageList: System.Windows.Form.ImageList, in toolBar: System.Windows.Form.ToolBar): System.Boolean CreateGroup(in menu: System.Windows.Form.ContextMenu. in textArray: System.String[], in buttonArray: System.Windows.Form.ToolBarButton[], in imageList: System.Windows.Form.ImageList, in toolBar: System.Windows.Form.ToolBar. in icons: System.Collections.Generic.List <System.Drawing.lcon>): System.Boolean CreateGroup(in menu: System.Windows.Form.ContextMenu, in textArray: System.String[], in buttonArray: System.Windows.Form.ToolBarButton[], in imageList: System.Windows.Form.ImageList, in toolBar: System.Windows.Form.ToolBar, in icons: System.Collections.Generic.List <System.Drawing.lcon>, DefaultIndex: System.Int32): System.Boolean UpdateTextArray(in textArray: System.String[]): System.Boolean

In a toolbar, we not only can add general toolbar buttons but also make the toolbar button display like a menu; the toolbar buttons can be integrated to a toolbar buttons group. SuperGIS Mobile Engine contains more than 100 built-in toolbar buttons for developers to use.

Take SuperPad 3.3 for example. The menu in the figure below includes four tools, Zoom In, Zoom Out, Slide Zoom, and Rotate Map. Developers do not have to implement the functions by themselves but directly use the objects, ZoomInButton, ZoonOutButton, SlideZoomButton, RotateButton, etc. Through the SGToolBarButtonGroup provided by SuperGIS Mobile Engine, developers can integrate toolbar buttons and even set

whether to switch the buttons in the toolbar while tapping tool menu.



The following sample code introduces how to produce a SGToolBarButtonGroup class, containing four toolbar buttons and how to add them it to the SGToolBar.

```
private void Initialize Zoom Group(SGToolBar ToolBar, bool IsChangeActiveButton, int
StyleIndex)
   SGTBB Group Zoom = new SGToolBarButtonGroup();
   SGTBB Group Zoom. IsChangeActiveButton = IsChangeActiveButton;
   SGTBB Group Zoom. TargetMapCtrl = MapCtrl;
   List<SGToolBarButtonGroup.ButtonArgs> ButtonArgsList = new
List<SGToolBarButtonGroup.ButtonArgs>();
                           ZoomIn = new ZoomInButton();
   ButtonArgsList.Add(new SGToolBarButtonGroup.ButtonArgs(ZoomIn,
ZoomIn.Caption));
   ZoomOut = new ZoomOutButton();
    ButtonArgsList.Add(new SGToolBarButtonGroup.ButtonArgs(ZoomOut.
ZoomOut.Caption));
                        SlideZoom = new SlideZoomButton();
    ButtonArgsList.Add(new SGToolBarButtonGroup.ButtonArgs(SlideZoom,
SlideZoom.Caption));
   Rotate = new RotateButton();
   ButtonArgsList.Add(new SGToolBarButtonGroup.ButtonArgs(Rotate,
Rotate.Caption));
   SGTBB Group Zoom.CreateGroup(new ContextMenu(), ButtonArgsList,
ToolBarGroup.ImageList, ToolBarGroup, null, 0);
   ToolBar.AddButtonGroup(SGTBB Group Zoom);
```

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15.2 Sample

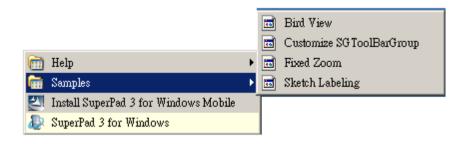


Sample

Next we are going to introduce some major extension project samples. After SuperPad is completely installed, it contains 3 projects as below. In the following section, we will describe the steps to develop the three projects.

- 1. **SuperGIS.Engine.Mobile.ToolBar.Sketchlabeling**: The plug-in extension for SuperPad. You can add a toolbar to the toolbar groups. Sketch function is available, and you can sketch any graph on the map.
- SuperGIS.Engine.Mobile.Module.FixedZoom: The plug-in extension for SuperPad. You can add the Fixed Zoom button on the map.
- 3. **SuperGIS.Engine.Mobile.ToolBar.BirdView**: The plug-in extension for SuperPad. You can add a toolbar to the toolbar groups. BirdView function is available and can

simulate 2.5D effect with which users can change the angle of depression.



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SketchLabeling



SketchLabeling

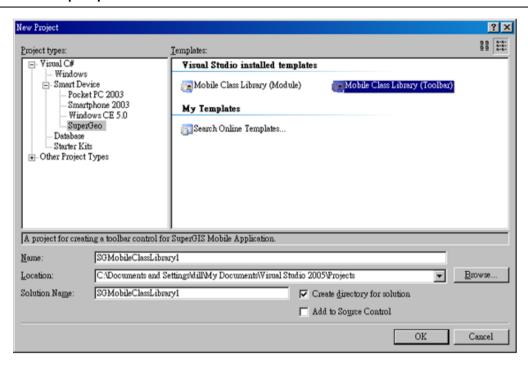
SuperGIS.Engine.Mobile.ToolBar.SketchL is the plug-in extension for SuperPad. You can add a toolbar to the toolbar groups. Sketch function is available, and you can sketch any graph on the map.



Firstly, increase a class which inherits SGToolBar. In general, we increase such class in two cases, one is to create this class together when a Mobile project is created; the other is to create this class for an existing project. Here below are the descriptions for them.

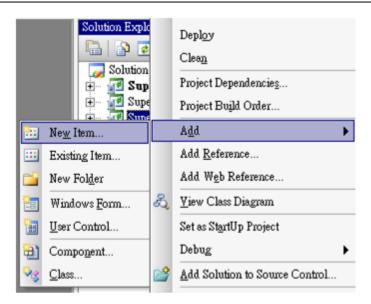
Add a project and add a class

Firstly, start Visual Studio, create a new project and select the project type "SuperGeo" in "SmartDevice." Select "Mobile Class Library(Toolbar)" in the Templates, and click OK.

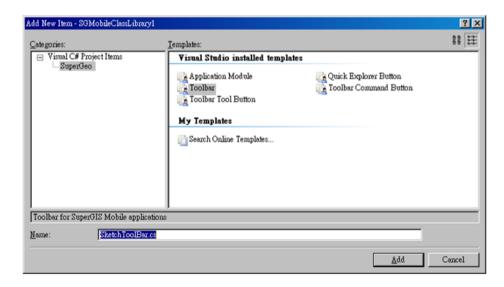


· Add a class for an existing project

1. Firstly, add new item in Visual Studio project. Right-click Solution Explorer and click "Add">"New Item" on the menu. See the figure below.



2. Next, in the Add New Item window, select "SuperGeo" in Visual C# in the left side window, select "Toolbar" in the templates in the right side and change the name to "SketchToolbar." Click "Add."



3. A class which inherits SGToolBar class is automatically created by Visual Studio.

```
public class SketchToolBar : SuperGIS.Engine.Mobile.SGToolBar
{
   public override bool Initialize(IApplication Application, int Mode)
   {
      throw new Exception("The method or operation is not implemented.");
   }
}
```

After that, we have to implement Initialize method. Firstly, select the image you would like to display in main toolbar. Specify the image of the toolbar to display by implementing IlmageProvider which gives corresponging images based on the size of the toolbar buttons. This is because smart devices have different resolutions, and the image on the toolbar needs to be adjusted followingly. By this way, in high resolution smart devices, the images will not be too small or too vague. We need to implement as code below.

```
public class SketchToolBar : SGToolBar, IImageProvider
      override public bool Initialize (IApplication Application, int Mode)
        return true;
      #region IImageProvider members
      public System.Drawing.Image GetImage(int Size)
          if (Size <= 16)
             return SuperGIS. Engine. Mobile. Utility. ImageOperator. Icon2Bitmap(
Resources.Sketch);
         else if (Size <= 32)
             return SuperGIS.Engine.Mobile.Utility.ImageOperator.Icon2Bitmap(
Resources.Sketch 32);
         else if (Size <= 48)
             return SuperGIS.Engine.Mobile.Utility.ImageOperator.Icon2Bitmap(
Resources.Sketch 48);
         else if (Size <= 64)
             return SuperGIS.Engine.Mobile.Utility.ImageOperator.Icon2Bitmap(
Resources.Sketch 64);
             return SuperGIS. Engine. Mobile. Utility. ImageOperator. Icon2Bitmap(
Resources.Sketch_32);
      }
      #endregion
```

As the toolbar class is created, we need to create "Toolbar Button." Toolbar Button is similar to the built-in toolbar buttons in SuperGIS Mobile Engine. In this case, the difference is we need to create the toolbar button class on our own. The toolbar buttons created in this section can be divided into two kinds:

One is "ToolButton" which interacts closely with the map control. For instance, when users click "Add Sketch", they can draw on the map with mouse freely with the point where mouse clicks as the base until mouse is released.



The red frame is the Tool Button of SketchLabeling extension

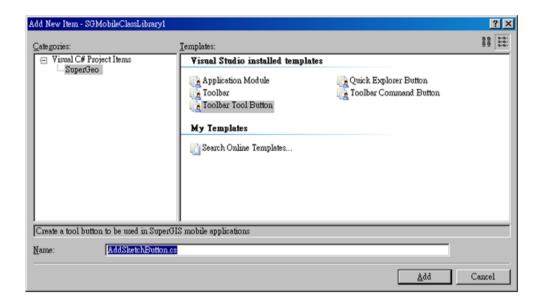
The other is "Command Button" which triggers function directly as it is clicked. For instance, as users click "Clear Sketch", the graph users drawed will be cleared. Or as users click Previous Sketch, the screen returns to the previous graph.



The red frame is the Command Button of SketchLabeling extension

In SuperGIS.Engine.Mobile.ToolBar.SketchLabeling project, the first toolbar button belongs to Tool Button, and the others all belongs to Command Button. To create toolbar buttons which have the same function as mentioned, we need to create a class which inherits SGToolbarButton for each toolbar button to show them on the toolbar of application. Then, we need to implement ITool for "Add Sketch" which draws on the map control to implement the function. Please follow the steps below:

1. Identically, add New Item in Visual Studio, select "Toolbar Tool Button", name it "AddSketchButton" and click "Add." See the figure below.



2. After you click Add, the class will be generated and the code as below will be added automatically.

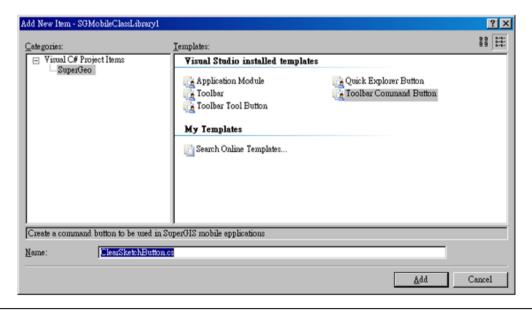
After the steps are accomplished in Visual Studio, expand region "ITool members", you can see the members including: Caption, Image properties and OnContextMenu, OnKeyDown, OnKeyUp, OnMouseDown, OnMouseMove and OnMouseUp methods. The description of the functions is stated below:

- ✓ Property:
- 1. Caption: Specify the display name of the button in application.
- 2. Image: Specify the display image of the button in application.
- ✓ Method:
- OnContextMenu: As users right-click mouse on the map (long-press in PDA), it will be called.
- OnKeyDown: As users press some specific key with mouse button, it will be called.
- 3. OnKeyUp: As the specific key is released by mouse button, it will be called.
- 4. OnMouseDown: As mouse clicks on the control, it will be called.
- 5. OnMouseMove: As mouse moves on the map, it will be called.
- 6. OnMouseUp: As mouse is released on the map, it will be called.

After understanding each property and functions of methods, now we can start coding for the function of the toolbar button. For the detailed coding method, please refer to SuperGIS.Engine.Mobile.ToolBar.SketchLabeling project.

Now AddSketchButton class is created. As to the rest four toolbar buttons which belong to Command Button, we are going to illustrate with "ClearSketch" button. Please follow the steps below:

1. Add New Item in Visual Studio, select "Toolbar Command Button", name it "ClearSketchButton" and click "Add." See the figure below.



As you click "Add", the class will be created and the code below will be automatically generated:

Expand region "IComand members", and you can see the members including: Caption, Image, Tooltip properties and OnCommand method as well and OnClick event. The functions are stated as below:

- ✓ Property:
- 1. Caption: Specify the display name of the button in application.
- 2. Image: Specify the display image of the button in application.
- 3. Tooltip: Set the related information to be displayed for the toolbar button in application.
- ✓ Method:
- OnComand: As users click the button, it will be called. You can define the function of the button here.
- ✓ Event:
- 1. OnClick: As users click the button, it will be called. If users want to extent function for this button, simply add code directly to OnClick event.

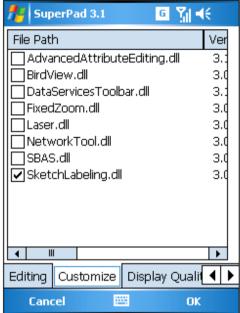
After understanding each property and functions of methods, now we can start coding for the function of the toolbar button. For the detailed coding method, please refer to SuperGIS.Engine.Mobile.ToolBar.SketchLabeling project.

Add the plug-in extension to SuperPad application

If you want to add SketchLabeling plug-in extension to SuperPad application, please place the DLL(SketchLabeling.dll) compiled by Visual Studio to "Customize" folder of SuperPad installation category. After that, start SuperPad and this plug-in extension shows in the "Customize" tab of "System Settings" button. Check "SketchLabeling.dll"

and exit SuperPad. The plug-in extension is added to the SuperPad application toolbar groups when you start SuperPad next time.





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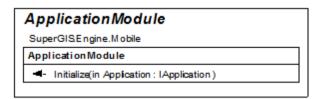
FixedZoom



FixedZoom

We illustrate how to implement a plug-in extension with toolbar above; however, we might not want to present all plug-in extensions in the form of toolbar. Take SuperGIS. Engine.Mobile.Module.FixedZoom project for illustration, this project adds two buttons on the map control, providing fixed zoom in and fixed zoom out function. Besides, SuperGIS Mobile Engine particularly design an abstract class, ApplicationModule, for extensions which do not present as toolbars. Like SGToolBar, the developers need to

implement Initialize method and code in this method for nitializing the extension.

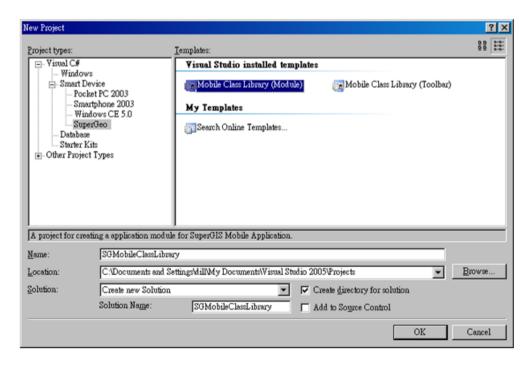


To implement the abstract class ApplicationModule, we need to create a class named FixedZoom which inherits the abstract class SuperGIS.Engine.Mobile.

ApplicationModule in Visual Studio by adding new item. In general, we add this kind of class in two cases, one is to create this class when adding a Mobile project, the other is to create this class for an existing project. See below the detailed statement.

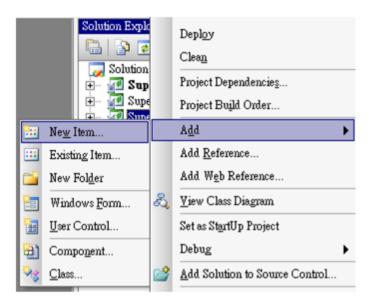
Add project and add a class

Firstly, start Visual Studio, create a new project and select the project type "SuperGeo" in "SmartDevice." Select "Mobile Class Library(Toolbar)" in the Templates in the right side. Click OK.

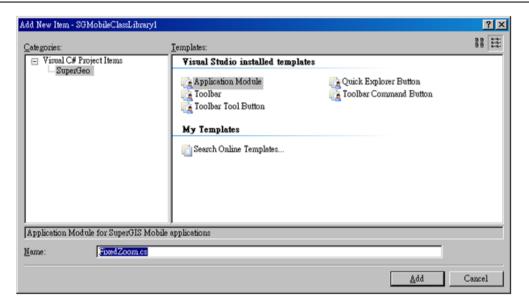


Add a class for an existing project

1. Firstly, add new item in Visual Studio project. Right-click Solution Explorer and click "Add">"New Item" on the menu. See the figure below.



1. In the Add New Item window, select "SuperGeo" in Visual C# in the left side of the window. Select "Application Module" in the templates in the right side and change the name to "FixedZoom", and click "Add."



2. A class which inherits ApplicationModule is automatically created by Visual Studio. See the figure below.

```
public void class FixedZoom : SuperGIS.Engine.Mobile.ApplicationModule
{
    public override bool Initialize(IApplication Application)
    {
        return true;
    }
}
```

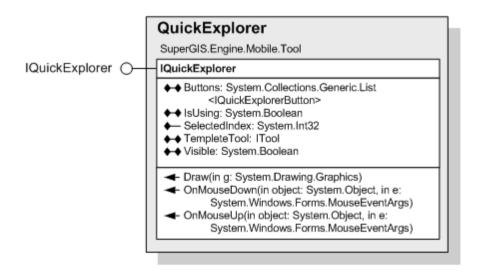
Here below is the complete sample of FixedZoom class. Identically, we need to code in Initialize method to initialize the plug-in extension.

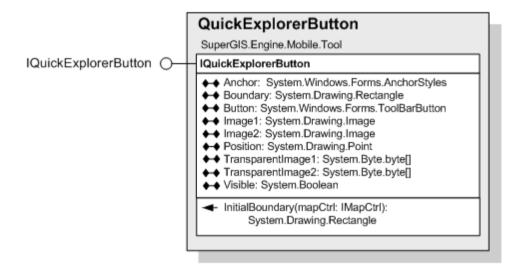
```
public class FixedZoom : SuperGIS.Engine.Mobile.ApplicationModule
   MapCtrl MapCtrl:
   QuickExplorerButton ButtonIn;
   QuickExplorerButton ButtonOut;
   #region IModule
      override public bool Initialize (IApplication Application)
          MapCtrl = Application.MapCtrl;
          if (Application.MapCtrl.QuickExplorer == null)
             Application.MapCtrl.QuickExplorer = new QuickExplorer( MapCtrl);
          IQuickExplorer MapNavigator = MapCtrl.QuickExplorer;
          ButtonIn = new QuickExplorerButton(
         SuperGIS.Engine.Mobile.Utility.DetectToolBarSize.ToolBarSize == 16 ?
         Resources.ZoomIn : Resources.ZoomIn 32,
         SuperGIS.Engine.Mobile.Utility.DetectToolBarSize.ToolBarSize == 16 ?
        Resources.ZoomIn2 : Resources.ZoomIn2 32,
        new Point (8,8),
         System. Windows. Forms. AnchorStyles. Right |
         System.Windows.Forms.AnchorStyles.Buttom
);
          MapNavigator.Buttons.Add( ButtonIn);
           ButtonOut = new QuickExplorerButton(
         SuperGIS.Engine.Mobile.Utility.DetectToolBarSize.ToolBarSize == 16 ?
         Resources.ZoomOut: Resources.ZoomOut 32,
         SuperGIS.Engine.Mobile.Utility.DetectToolBarSize.ToolBarSize == 16 ?
        Resources.ZoomOut2: Resources.ZoomOut2 32,
        new Point (8,8),
         System.Windows.Forms.AnchorStyles.Left |
         System.Windows.Forms.AnchorStyles.Buttom
);
         MapNavigator.Buttons.Add( ButtonOut);
          return true;
```



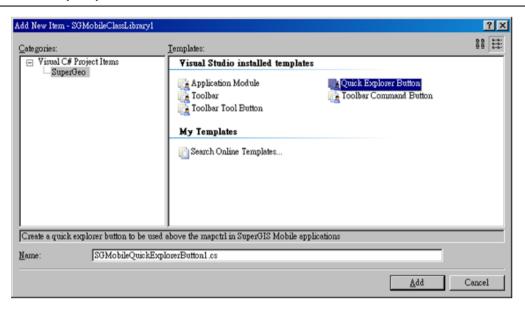
This extension adds two image icons to be the buttons which can fixed zoom in and fixed zoom out map. The developers do not need to implement fixed zoom in and fixed zoom out, they can directly use the toolbar buttons provided by SuperGIS Mobile Engine. It works like using the built-in toolbar buttons, but the difference is we do not present the functions as toolbar buttons but in another way that developers define on their own to achieve the same goal.

QuickExplorer and QuickExplorerButton are the classes that SuperGIS Mobile Engine provides for adding the custom buttons in the map control and specifying the position of each button. If you only need to do some simple work like Panning or Zooming, it is not necessary to use toolbar but you can simply add QuickExplorerButton in the map control to make it. In this sample, we are to add two QuickExplorerButtons and assign the tools as FixedZoomInButton and FixedZoomButton.





If you want to quickly create QuickExplorerButton, you can also add new item in Visual Studio, as you select new item, choose "Quick Explorer Button" and click "Add."



A class which inherits QuickExplorerButton will be generated. The way to use this class is the same as to use QuickExplorerButton, please refer to the sample code of FixedZoom class in this project.

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BirdView



BirdView

SuperGIS.Engine.Mobile.ToolBar.BirdView project is a plug-in extension of SuperGIS Mobile Engine. It adds a toolbar in the toolbar group and provides BirdView function which simulates 2.5 D effect and users can change the angle of depression.

SuperGIS.Engine.Mobile.ToolBar.BirdView project includes BirdView class as the toolbar as well as two toolbar button classes, BirdViewUpButton and BirdViewDownButton. BirdView.cs has the code. The way to create this project is similar to SuperGIS.Engine.Mobile.ToolBar.SketchLabeling project. Firstly, create a BirdView class which inherits SGToolBar (please refer to the way to add new item in

the previous section) and create two toolbar buttons which respectively inherits SGToolbarButton and ICommand, and implement the method.

In this sample, we implement the 2.5D effect by modifying the ZValue of DisplayTransformation class. The sample code for BirdViewUpButton class is as below:

```
public void OnCommand(IcommandTarget Parent)
{
    if
    (((SuperGIS.Engine.Mobile.DisplayTransformation)Parent.DisplayTransformation
        ).ZValue == 0)
    ((SuperGIS.Engine.Mobile.DisplayTransformation)Parent.DisplayTransformation
        ).ZValue = 0.1;
    else
    ((SuperGIS.Engine.Mobile.DisplayTransformation)Parent.DisplayTransformation
        ).ZValue *= 1.6;
    Parent.Invalidate();
}
```

The BirdViewDownButton class adjusts the 2.5D effect to 2D effect, and the samle code is as below:

```
Public void OnCommand(IcommandTarget Parent)
{
   if
   (((SuperGIS.Engine.Mobile.DisplayTransformation)Parent.DisplayTransformation
        ).ZValue == 0)
   ((SuperGIS.Engine.Mobile.DisplayTransformation)Parent.DisplayTransformation
        ).ZValue = 0.1;
   else
   ((SuperGIS.Engine.Mobile.DisplayTransformation)Parent.DisplayTransformation
        ).ZValue /= 1.6;

if
  (((SuperGIS.Engine.Mobile.DisplayTransformation)Parent.DisplayTransformation
        ).ZValue < 0.0001)
   ((SuperGIS.Engine.Mobile.DisplayTransformation)Parent.DisplayTransformation
        ).ZValue = 0

Parent.Invalidate();
}</pre>
```

At last, please refer to the previous seciton for the way to load BirdView extension. You can load the extension by reading plug-in extension though the Customize folder in SuperPad.

How to develop SuperPad?	
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