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# User Manual

## MapConverter

How to create custom maps for  
your AvMap navigator

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## I. Introduction

The Map Converter is one of the functions you can find in the Suite: it allows converting a paper or electronic map and loading it in your navigator.

The MapConverter works on PC.

### Which maps can I load on my navigator?

MapConverter allows you converting raster maps from the .kmz (Google Earth) or .map (Ozi Explorer) formats to the AvMap proprietary format. To use the converter you need to have a .kmz or .map file.

The “raster” map will be shown in the background of the vector street map preloaded in the navigator. Raster maps are just images and cannot provide turn-by-turn navigation, which is possible only along the streets present in the preloaded vector map.

### Attention:

When creating your custom map, be responsible and only create a custom map from a map that is in the public domain, that you hold the copyright in, or that you have permission to use from the copyright holder. AvMap disclaims any liability for the custom maps loaded into the navigator by customers. AvMap disclaims any liability deriving from an improper use of the device in a way that may cause accidents or damages to things or persons, due to the inaccuracy of the data pictured in the custom maps.

### How many maps can I load on my navigator?

AvMap navigators read up to 8 maps, included those preloaded in the SD memory card, independently of the free space in the memory. Please check how many maps are already preloaded on your SD to know how many more you can load at the same time.

Maps preloaded on your navigator are listed in the maps info page. To access this page

- Press the Menu button,
- Scroll the pages and press of system info,
- Press the Maps button.

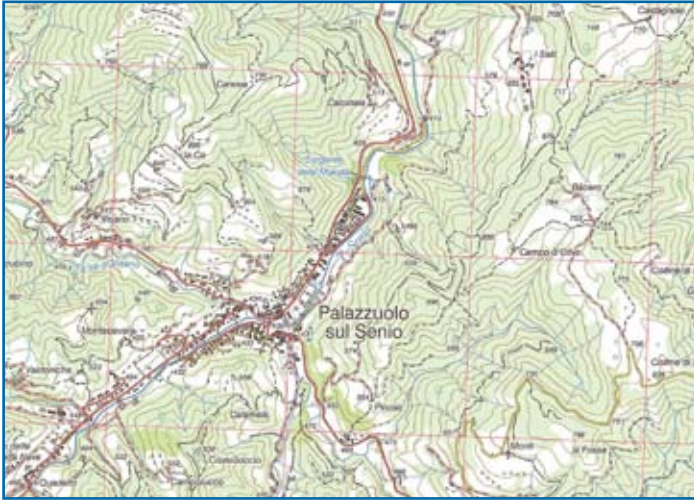
Each map has a name and a map code like this: T-EU-Qxxx.xx (or T-NA-Q or T-SA-Q according to the continent)

and next to that the type of map is indicated in brackets (TCE / TZC / TCV).

### Attention:

Do not load more maps with the same coverage to avoid overlapping (in that case only one map will be visible)

## II. How to obtain an image of a map



- If have a paper map is printed, you can scan it at an appropriate resolution, and save the image as a JPEG.
  - if your map is electronic, such as a PDF, you need to convert it using a suitable program to save it as a JPEG.
- The image of the map has to be in JPEG, PNG, TIFF, BMP or GIF format.

### Attention:

the maps have to meet some requirements

- The map should be geographic or in Mercator projection
- The map should not have any rotation

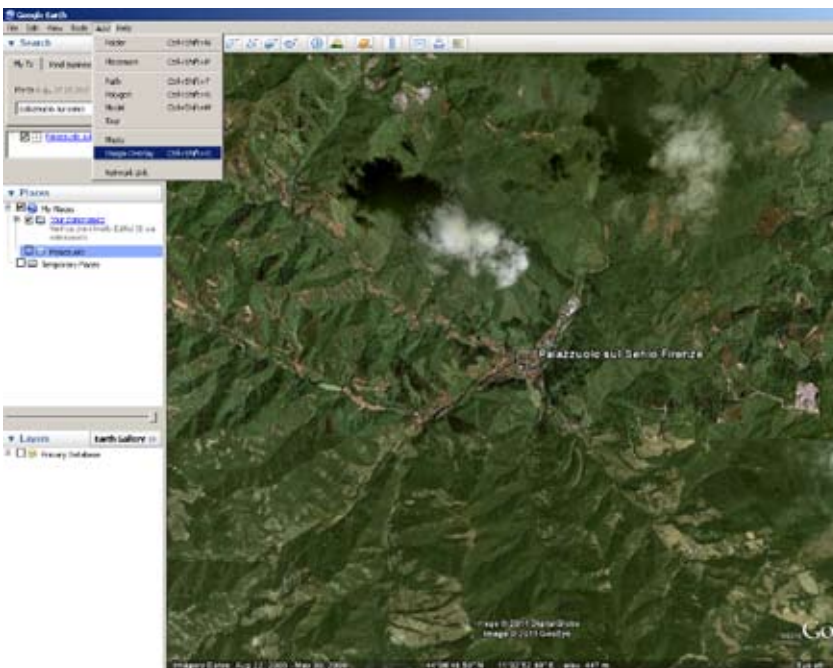
## III. How to geo-reference the map on Google Earth

Once you have the image of the map (in JPEG, PNG, TIFF, BMP or GIF format) you can geo-reference it, and create the .kmz file using with Google Earth.

You can download Google Earth, for free from <http://www.google.com/intl/it/earth/index.html>.

1. Open Google Earth.

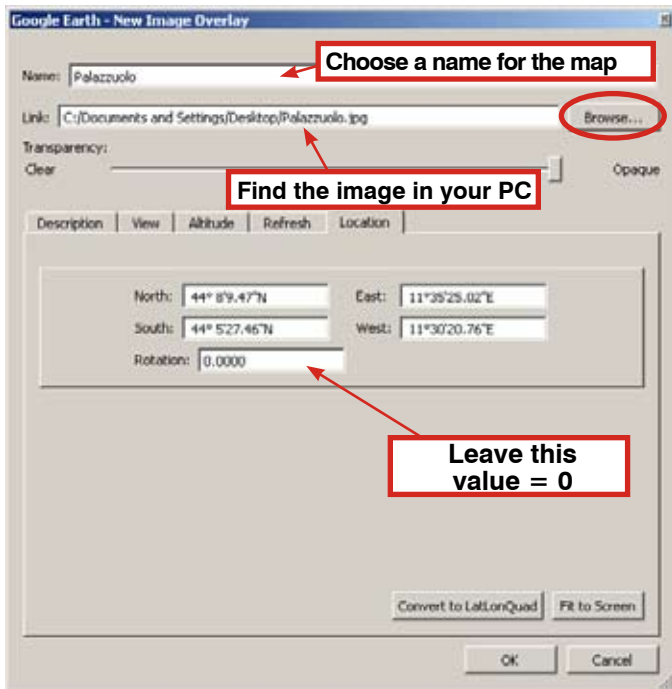
2. Locate in Google Earth the approximate place represented in your map. It can be useful to search for the name of a street shown in the map, to get a reference point. The closer the viewing area is to the location and coverage of your JPEG, the easier it will be to georeference.



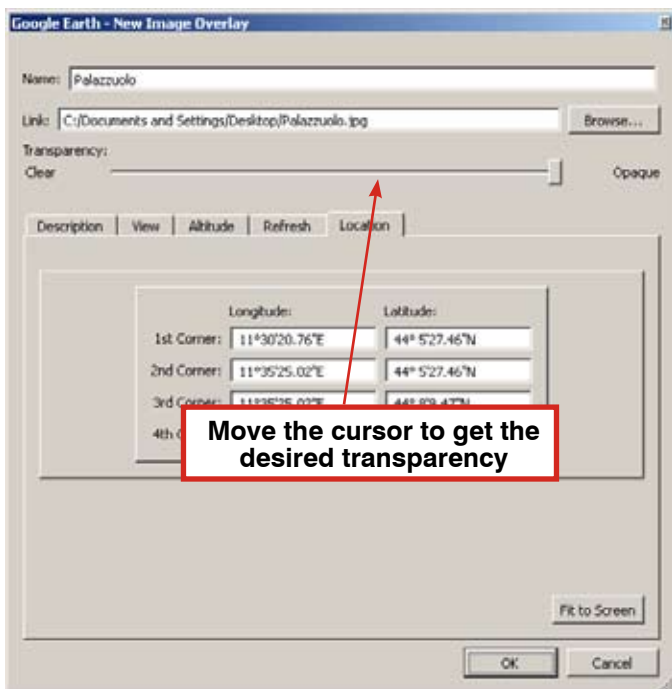
If the map you started from was already georeferenced, the operation will be easier: it is enough to get the Lat Lon coordinates of the 4 corners and insert them on Google Earth.

3. Click on “Add” on the Google Earth menu and choose the option “Image Overlay” (or click on the “Add overlay” icon on the bar on top of the map)

4. In the “New Image Overlay” dialog box, provide a name for the map file and use the “Browse” button to select the map image on your PC.



5. Click on the “Location” tab and make sure the Draw value is left to zero.



6. Use the transparency to adjust the transparency of the image, so that so the Google Earth satellite imagery can be seen beneath the JPEG. This way it will be easier to match the image with the map beneath.



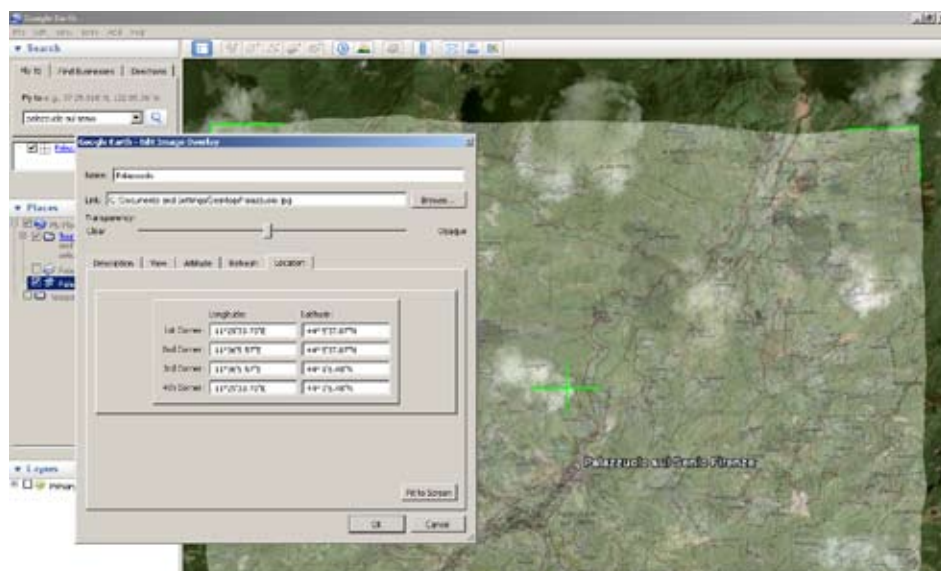
## 7. Georeferencing the image

A. Manual Georeference: Move the green marks on the image to adjust the corners, edges, center of the image. You can click and drag the corners and edges to stretch it or you can click and drag the center to move it.

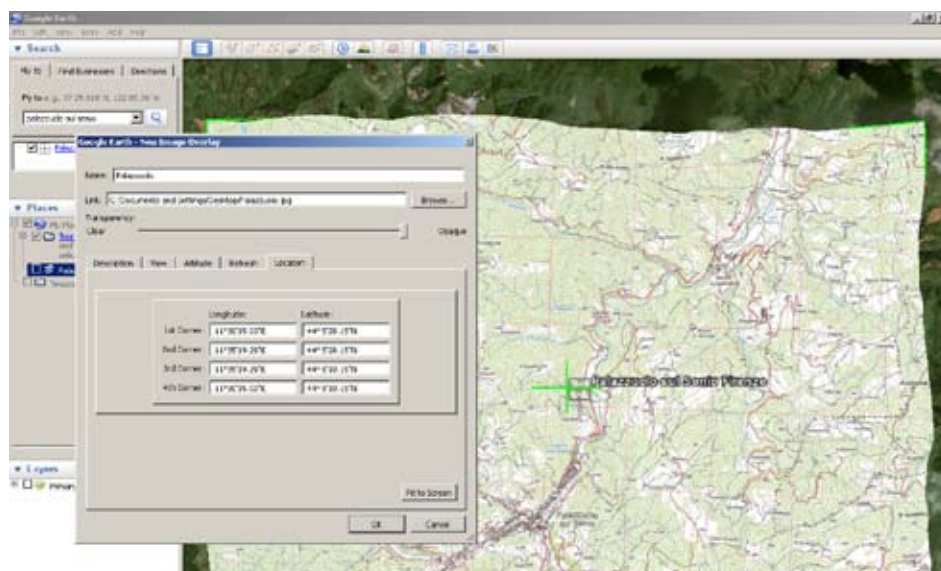
B. Georeferencing with geographical coordinates:

If you have the coordinates of the four corners of the map, you can easily insert them in Google Earth.

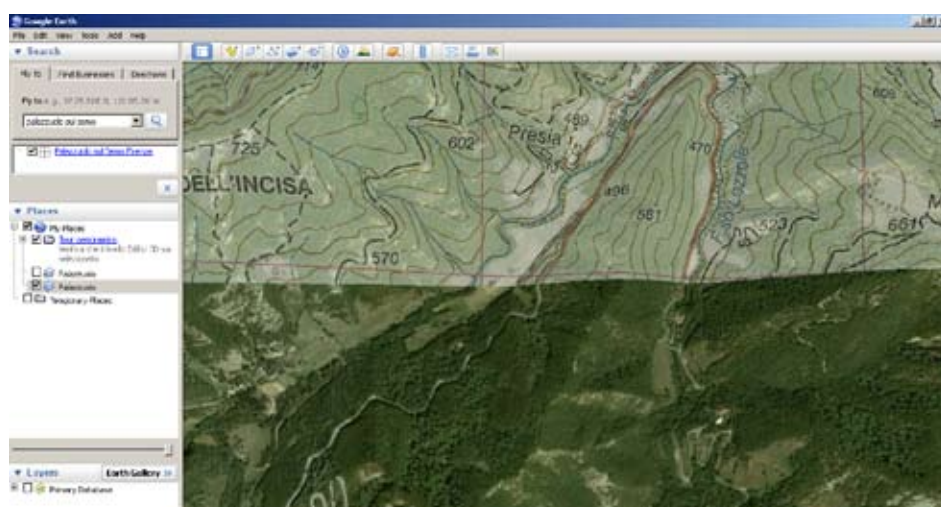
Click on the "Location" tab, click on "Convert in Lat Lon Quad" and the insert the Lat Lon of the four corners.



8. When the streets of your map coincide with those of the satellite imagery of Google Earth Click OK in the "New Image Overlay" window to save your custom map.

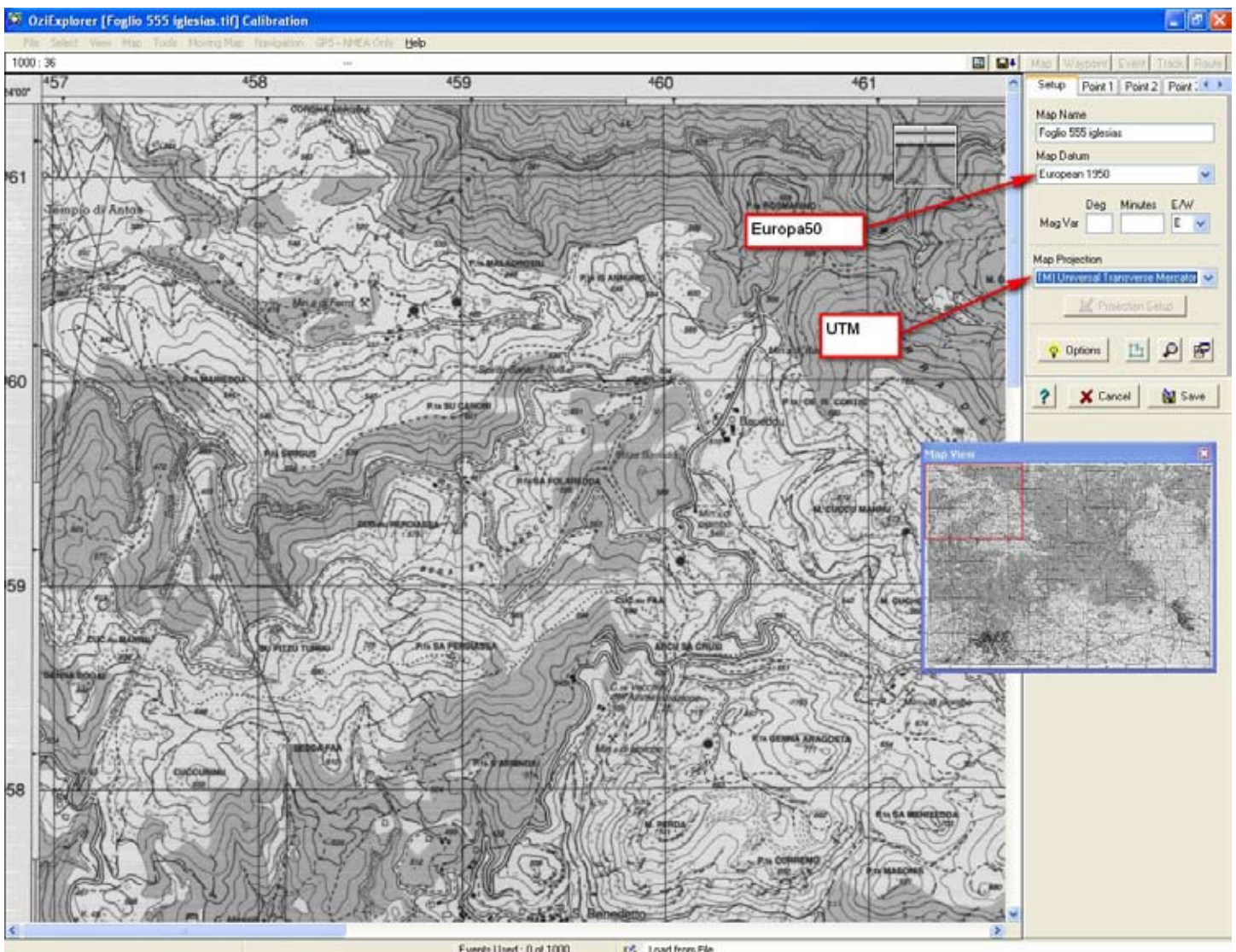


9. In the left column of Google Earth, in the "Places" box, right click on the name of the file you have just created and select "Save place as ", choosing .kmz as format, and a folder in your PC to save it.



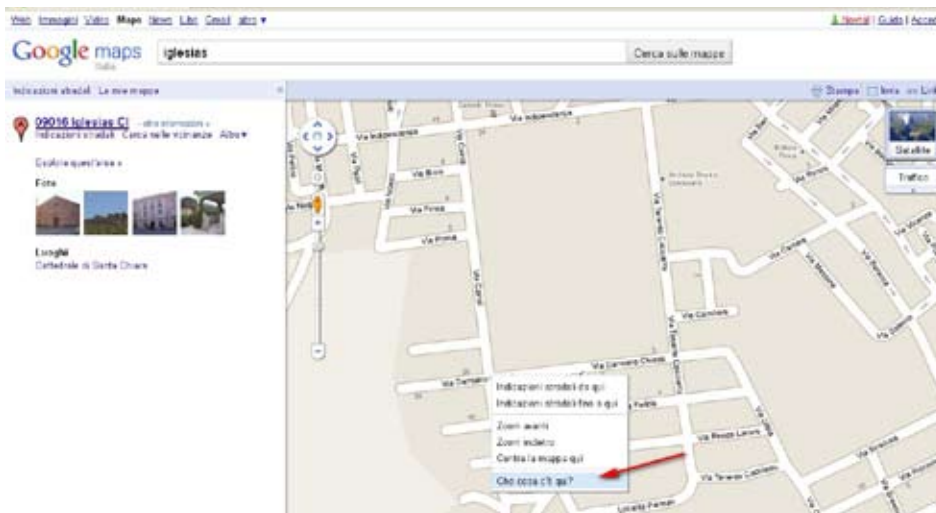
## IV. How to geo-reference the map with OziExplorer

1. Install OziExplorer
2. From the File menu, in the upper bar of OziExplorer, choose the option "Load and calibrate map image".
3. Choose in your PC the file (you can load different types of files: tiff, bitmap, jpeg, png, kap, cap, ozf, cv, sid). The calibration window appears.
4. In the Setup tab in the right column of the screen set the Map Datum and the Map Projection type.



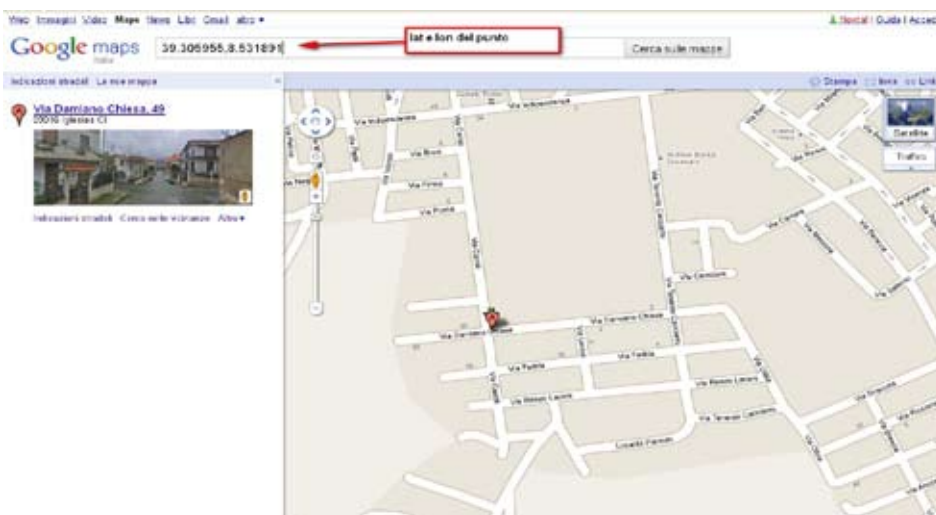
5. You have now to find the coordinates of at least 5 points on the maps. If your map does not contain this info, you can get them with the help of Google Maps:





- Open Google Maps <http://maps.google.com> and search for the place represented in your map.
- Search in Google Maps for a specific point represented on your map,
- Right click on this point and select “What’s here?” the upper will display the geographical decimal coordinates for that point.

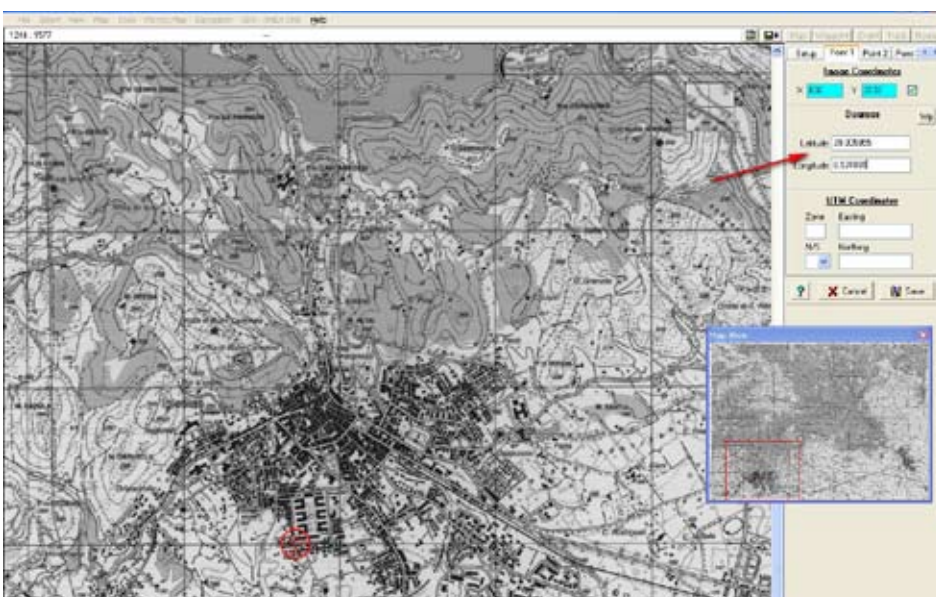
6. Now to georeference these points in OziExplorer click on the Point1 tab in the right column: the cursor con will change in “Calibrate position 1”,



7. Select the exact point previously selected on Google Maps. When you click on it the point will be marked with three concentric red circles.

8. In the right column insert LAT and LON for that point as displayed in Google Maps.

9. Repeat the operation for at least other 4 locations, for a total of 5 points. We suggest you to take the four corners plus a point in the middle of the map.



10. Click on Save and choose name to save the geo-referenced map in .map format in your PC

You have now created a .map file, you can close now OziExplorer.

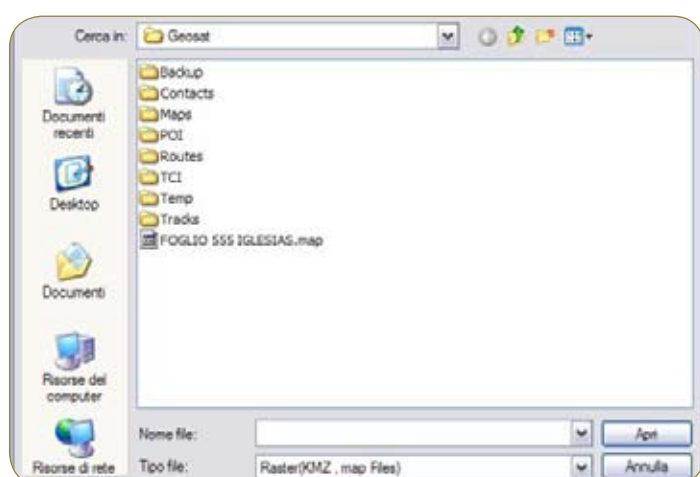
## V. How to convert the map with MapConverter

Now that you have created a .kmz or .map file you can convert it in the AvMap format and import it in your navigator. If you wish to use existing .kmz, please make sure they really contain an image and not a link (opening them with Google Earth).

1. Open the Suite, connect the navigator, log in and click on the Map Converter button.



2. Select the map source file (.kmz or .map), browsing your PC and select the destination folder where the new converted file will be saved.



3. Choose a name and a description for the map..



4. Choose the conversion scale clicking the corresponding option. The scale should reflect the scale of the starting map and it will determine at which level of zoom it will be displayed in the navigators' display.

5. Click on the "Convert" and wait for the pop-up window to appear.

6. Click "OK". Now click on 'Manage Maps' to choose which custom map you want to load on the navigator.



AvMap navigators can read up to 8 maps included those preloaded in the SD memory card, independently of the free space in the memory, but you can change and substitute them any time you want using the Manage Maps page.

### Attention:

Do not load overlapping raster maps as navigator will show only one of them. If your navigator already contains a raster map covering the same area as the custom map you want to load, you may consider removing it from the SD card (save a backup of that map on your PC).