Manual and workflow for
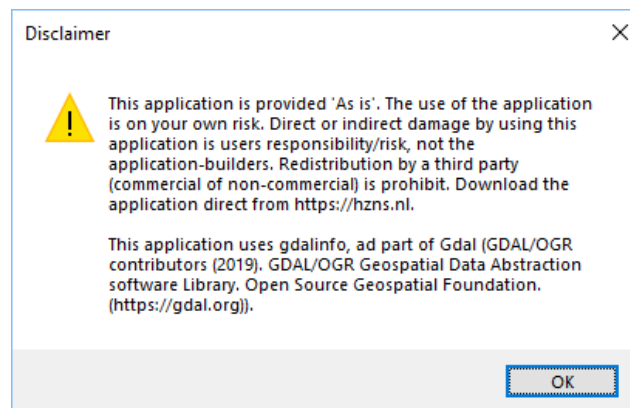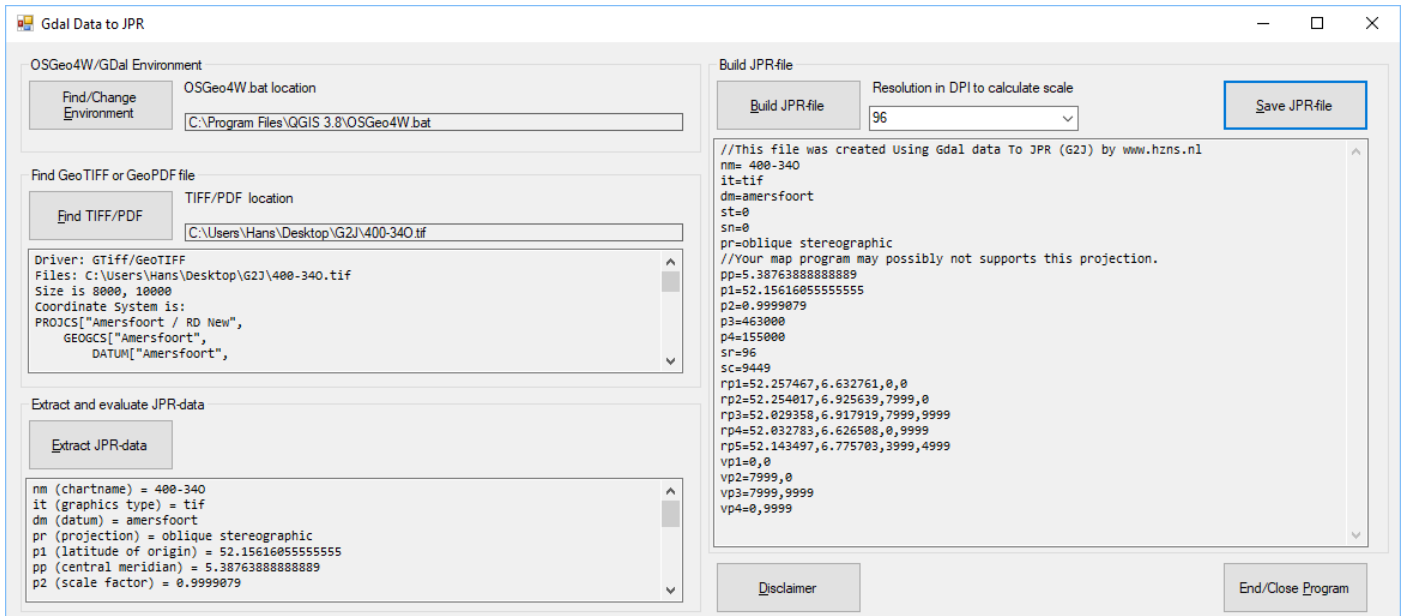# Gdal data to JPR (G2J)

Version: 0.2 (November 1, 2019)

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Content

Change log

Version	Date	Remarks
0.1	October 1, 2019	Trial version
0.2	November 1, 2019	Initial version

Before you start

This workflow will tell you step by step to convert a GeoTIFF- of GeoPDF-map to a Memory-Map usable map and run this map in Memory-Map. The tools used in this procedure are Gdal, PDF Exchange Editor (in case of GeoPDF-file), a pixel orientated graphics program to reduce the color depth of the image (I prefer Paint.Net) and Memory-Map with a proper license to run a third party maps (what we are doing). If you like to use your map on another device using Memory-Map, you need a second license for third party maps. If you want to manipulate the content of the JPR-file you need further more a text editor.

The workflow contains the following steps

1. Before you can use Gdal data to JPR (G2J)
2. First use of G2J
3. Creating the JPR-file for Memory-Map
4. Creating of a PNG-file of the GeoPDF-File
5. Manipulating the image-file of your map
6. Creating your Memory-Map QCT file

Before you can use Gdal data to JPR (G2J)

G2J uses the function GdalInfo from the OSGeo4W/Gdal environment. Before you can use G2J you must install this environment. On the website of Gdal you will find the installation information. Alternatively you can install QGIS. Gdal will be installed a part of.

First use of G2J

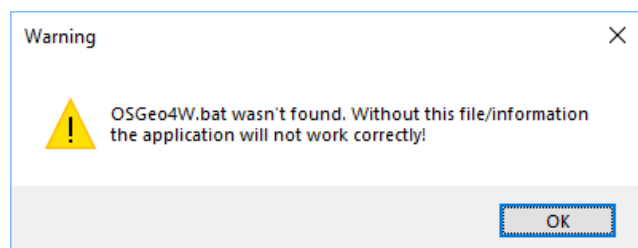The first time you start G2J you will be prompted with a warning (below).

Image 1: Warning OSGeo4W.bat

After clicking on the OK button, a *Find File* window will be opened. Look for the file `OSGeo4W.bat`. This file starts the OSGeo4W environment. If you use QGIS you will find this file in the QGIS "root" directory (for example `C:\Program Files\QGIS X.Y` were `X.Y` stands for the QGIS version). The location of `OSGeo4W.bat` will be saved in your documents directory (`C:\Users\<your windows username>\Documents\g2j.ini`). The next time G2J will load is location automatically.
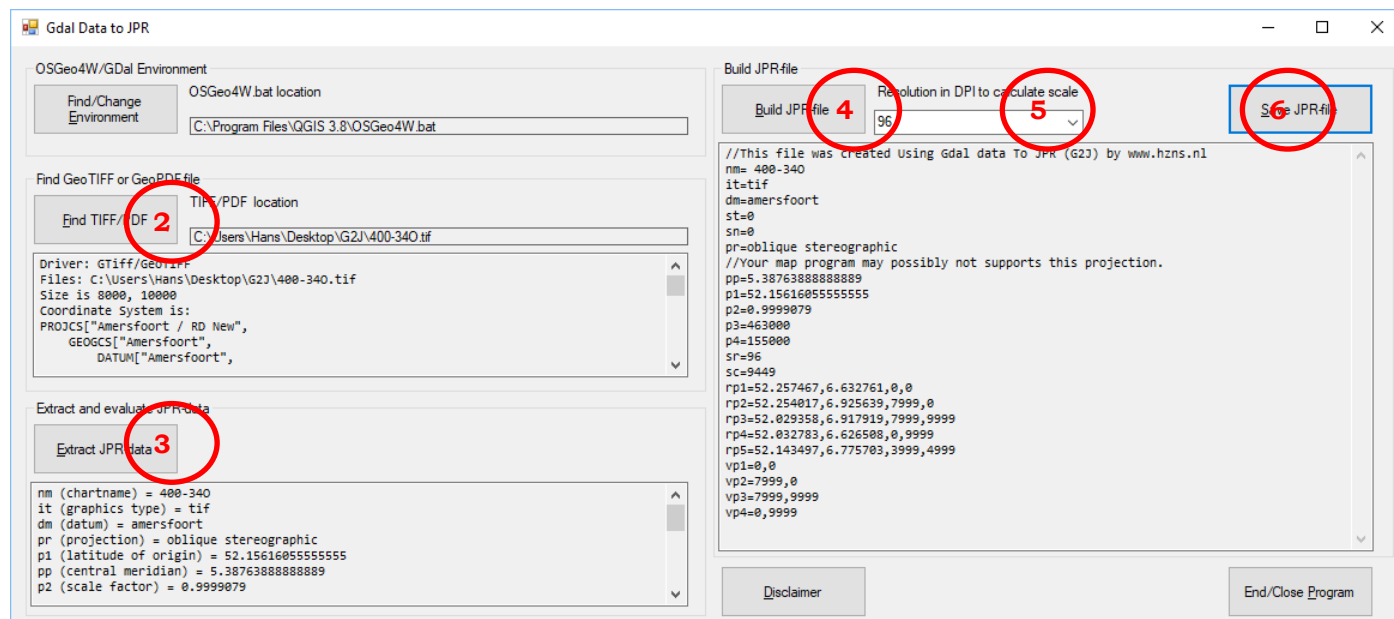
Creating the JPR-file for Memory-Map

Image 2: G2J screen

1. Open Gdal data to JPR (G2J)
2. Find the TIFF- or PDF-file. If the file contains relevant data, they will be presented. If the file doesn't contain georeferenced information the procedure stops (with a warning).
3. Extract the JPR-file. The extracted data will be become visible. You will be asked if the map has a collar. Only in the case there is no collar the vertex polygon can be generated.
4. Build the JPR-file. The content for the JPR-file will be visible.
5. In case there is enough information about scale and resolution, you can change the resolution. The consequence of this action is a changing scale. Changing this setting will not have any effect on the image file.
6. Save the JPR-file. This JPR file will be saved in the same directory as the TIFF or PDF-file. If the JPR-file already exists, you will be asked to overwrite.
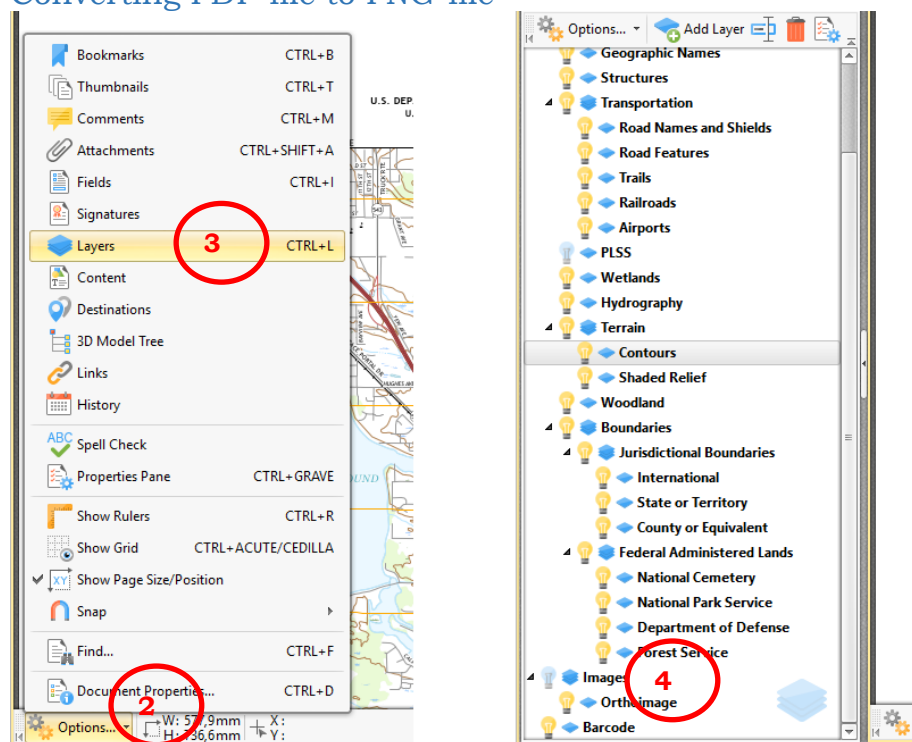
Converting PDF-file to PNG-file

Image 3: Pdf Exchange Editor 1

1. Open your PDF-file in PDF Exchange Editor.
2. Click on the *Options…* button. The options will appear.
3. Select option *Layers*. The layers will appear. If there aren't any layers go to item 5
4. By clicking on a bulb you can (de)select a layer. In image above the layers *Images* are deselected.
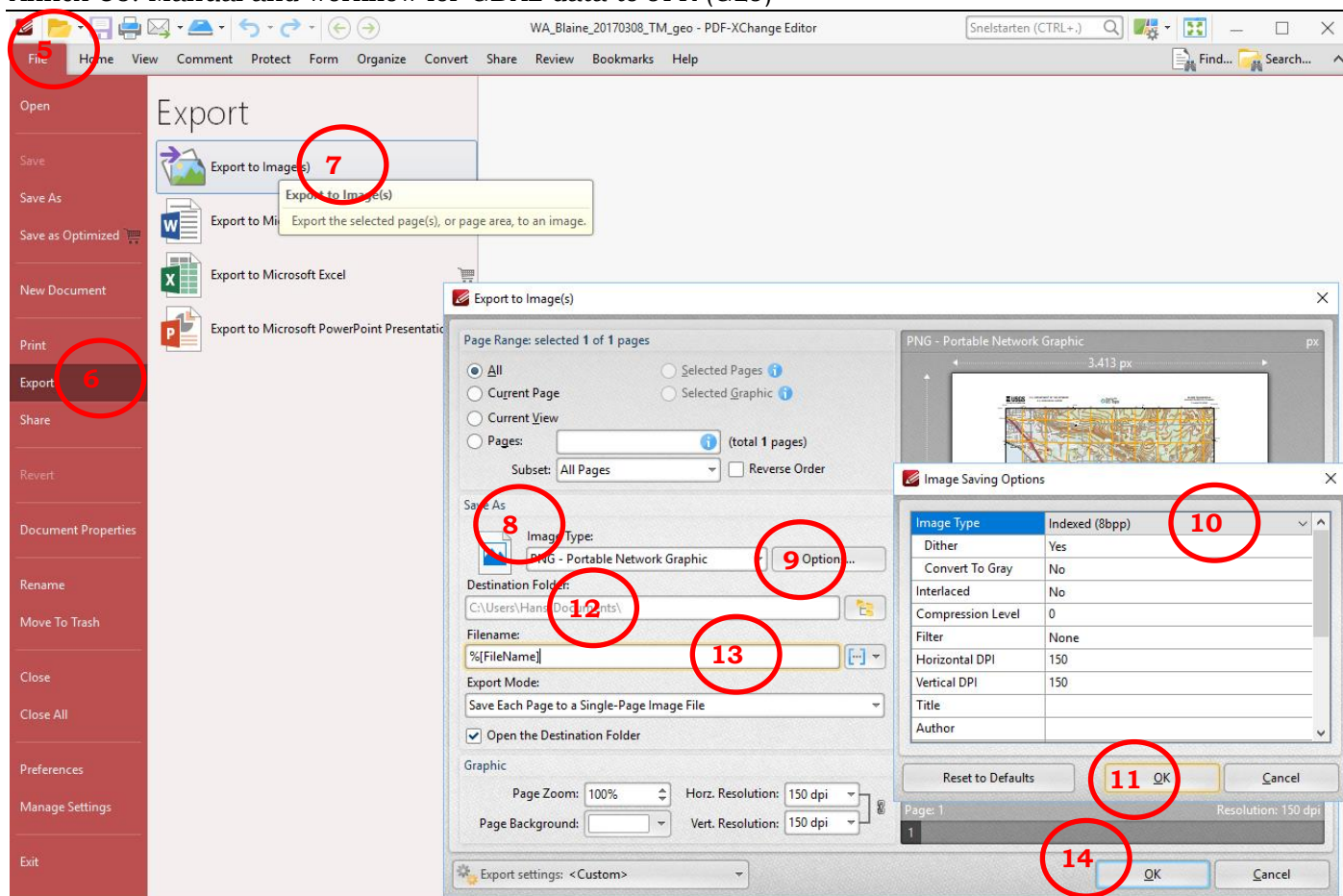
Image 4: Pdf Exchange Editor 2

5. Select the *File* menu.
6. Select the option *Export*.
7. Select *Export to Image(s)*. The window *Export to Image(s)* will appear.
8. Change the *Image Type* to "PNG - Portable Network Graphic". Alternatively you may choose the TIFF- or JPG-format.
9. Click on the button *Options…* . The *Image Saving Options* windows will appear.
10. Select *Image Type* "Indexed (8bpp)".
11. Click on the *OK* button in the *Image Saving Options* window. The changes will be saved and the window will close.
12. You may change the *Destination Folder:*. The best option is the same directory (or map) as your PDF file.
13. To be sure your image will have the same name as your PDF-file you must change the *Filename:* to: %[FileName]
14. Click on the *OK* button in the window *Export to Image(s)*. The image will be created and the window will closed.

Manipulating the TIFF-file of your map

Most images of maps will come with a 24 bit color depth (16M colors). Memory-Map does not accept this images. The color depth must be reduced to 8 bit (256 colors). You may use any raster graphics program with this functionality. I have good experiences with the programs XnViewMP® and Paint.Net®. Keep in mind that many programs cannot handle large image files (over 10,000 x 10,000 pixels) (Paint.Net does).

When converting a color change can occur (for example, a green or a blue cast). This is a consequence of the (mathematical) method used for converting. Some programs can be adjusted (Search under preferences/settings).

## Editing the file names and the JPR-file content.

If you want to edit the files names of your image file, keep in mind you must change the name of your JPR-file too. Except the extension the names of both files (JPR- and image-) must be the same.

You can always edit the content of the JPR-file with a simple text editor (like Windows Notepad). I do not advise you to remove any line. Editing the line `nm=` can be useful. This variable represents the name of the map shown in the *Map List* screen (image 5). A more appealing name with a geographical and/or a scale indication can be useful. Another suggestion is adding a copy write statement. This statement will be shown on prints made by Memory-Map and is, in most cases, a formal and surely a polite obligation. An example: `cr=© OpenStreetMap contributors, CC-BY-SA`.

In case your image-file is based on a PDF-file you must change `it=pdf` **into** `it=png` **(or** `jpg` **or** `tif` **depending on the graphic format you choose) .**

The changing of file names and/or editing of content of the JPR-file must be done before step "Creating your Memory-Map QCT file".

Creating your Memory-Map QCT file
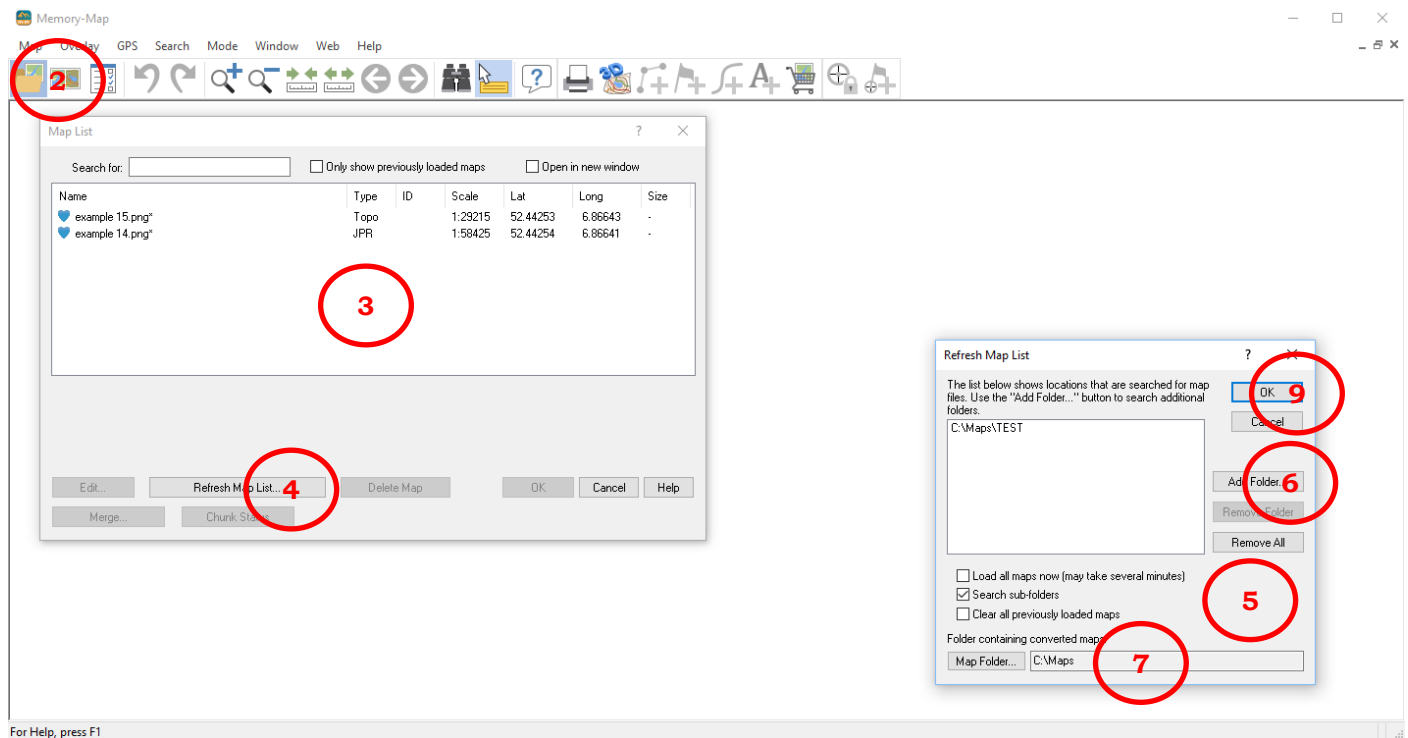
Image 5: Memory-Map 1

1. Open Memory-Map.
2. Open the Map list by using the keyboard combination *CTRL + M* or clicking on the *Map List* icon.
3. The *Map List* window will open.
4. Click on the button *Refresh Map List ....*
5. The *Refresh Map List* window will open.
6. In the upper textbox must be the name of the folder containing your JPR- and PNG-file. In not, add the folder.
7. At the bottom of the window is a textbox *Folder containing converted maps:*. This is the folder where you will find the QCT-file of the map (this is the converted map)
8. all the folders in both textboxes must exists. Otherwise Memory-Map does not work properly.
9. When everything is ready click on the *OK* button.
10. The *Refresh Map List* window will close and the *Map List Window* will become active again. You will see the name of your new map (with an asterix). May be you must scroll.
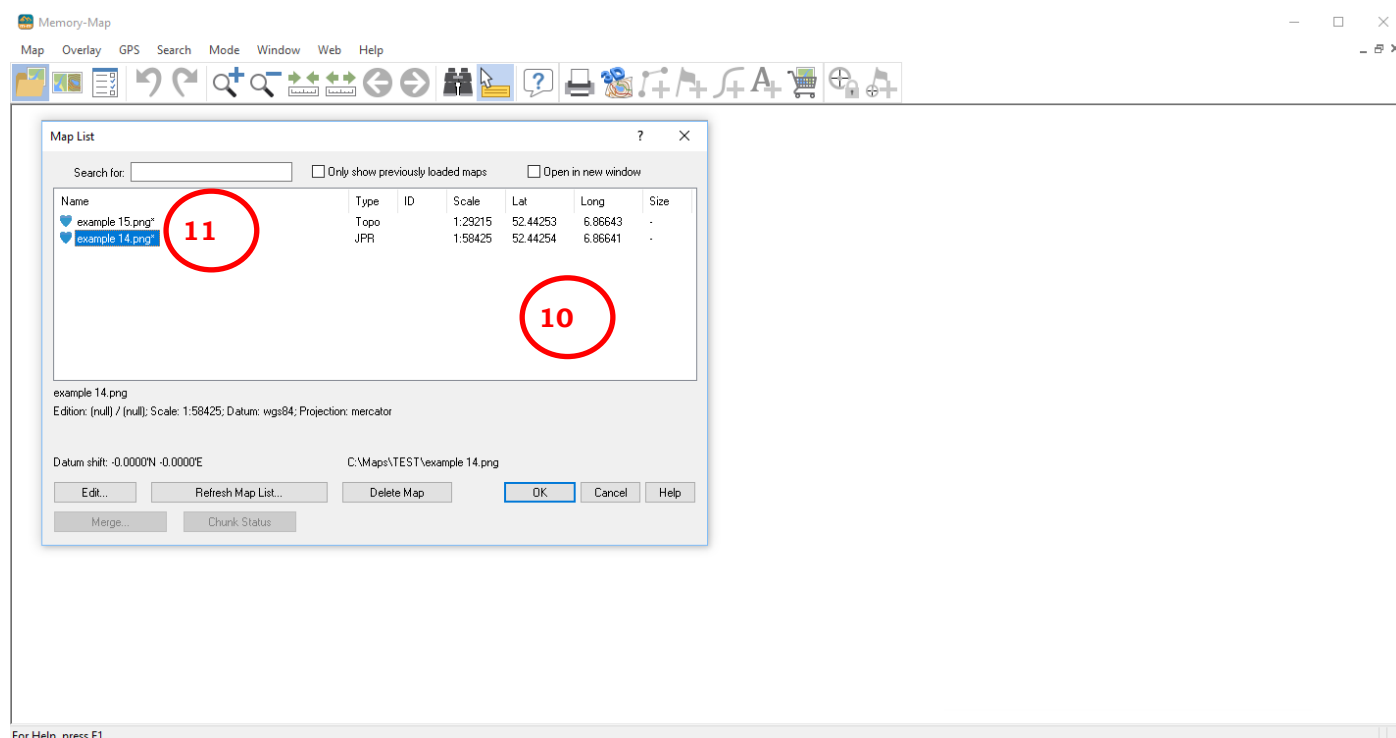
Image 6: Memory-Map 2

11. Select this map by double clicking on the name.
12. The Map List Window will disappear and the map will be loaded in the main windows of Memory-Map.
13. The last action is testing the calibration of your new map. Pick three or more point on your map read the coordinates and verify them using an independent source (for example GISsurfer). Work with a split screen is most convenience; half Memory-Map and half GISserver
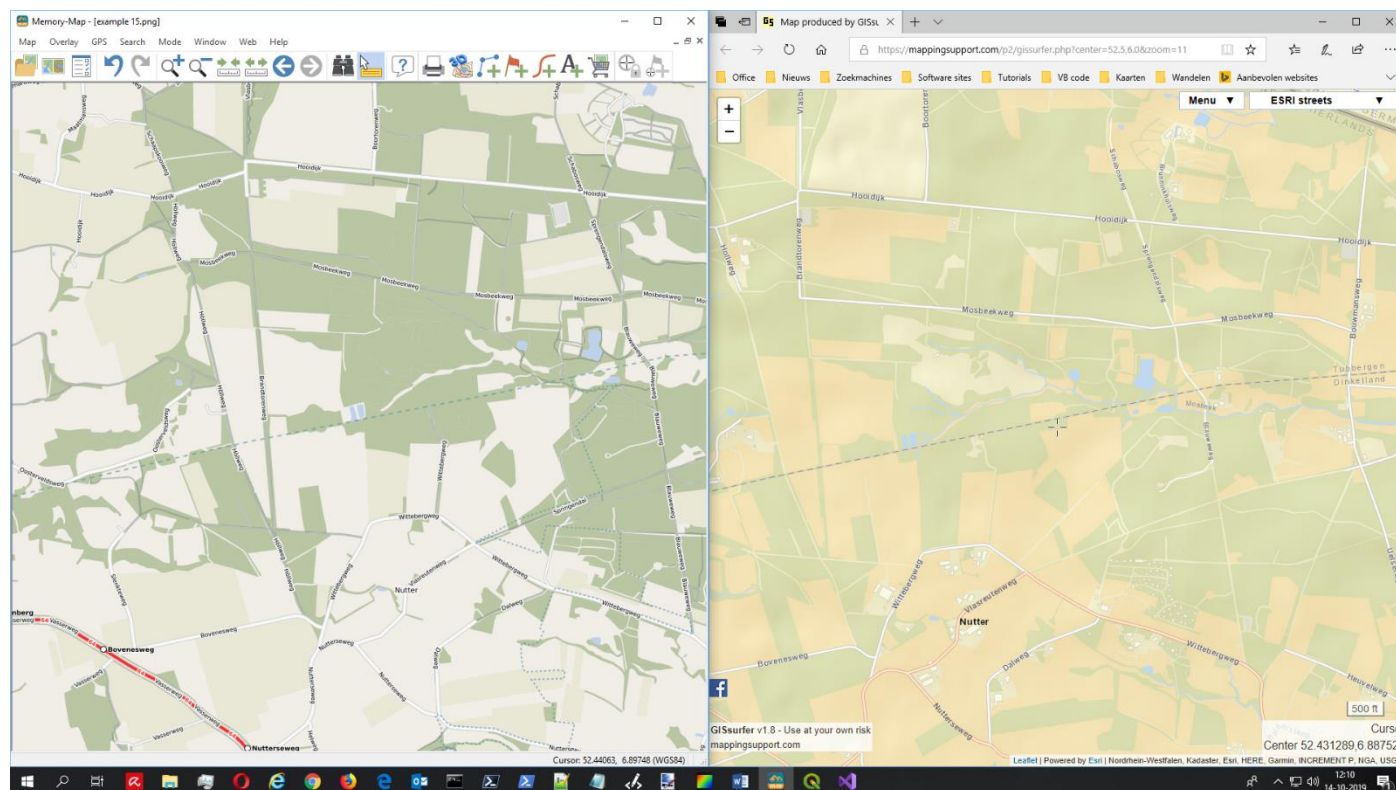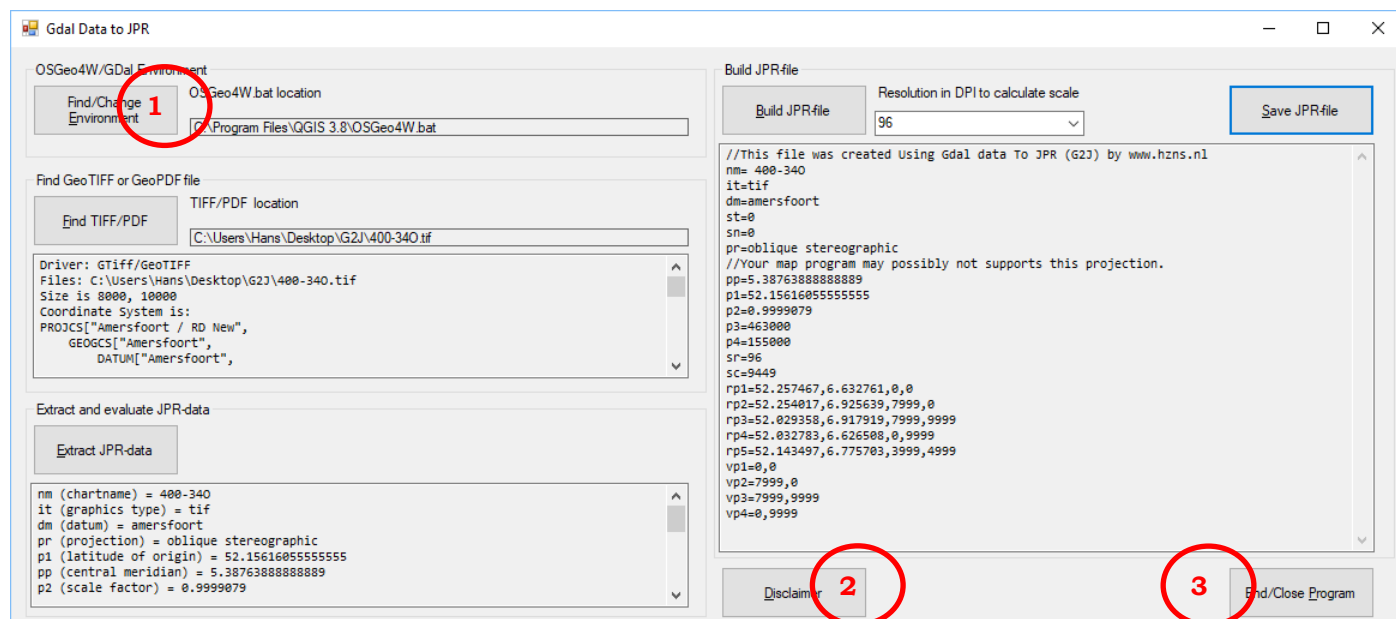

Image 7: Split sceen

The other buttons

Image 8: The other buttons of Mob2J

In the workflow were three buttons not mentioned. The first one is the *Find/Change Environment* button. With this button you can select another OSGeo4W environment. Maybe you want to use an older or newer one. Second the *Disclaimer* button. Hitting this button it shows you the disclaimer for the application. Third one is the *Close/End program* button. The application will close using this button.