

CONVERTING SRTM FILES TO IL2 MAP FILES WITH MicroDem

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Necessary applications and files :

MicroDem (which is free) can be found at:

<http://www.usna.edu/Users/oceano/pguth/website/microdemdown.htm>

My correction curves at:

http://rapidshare.com/files/80668059/MicroDEM_Files_BkUp.zip.html

SRTM data you'll need get from following link:

<ftp://e0srp01u.ecs.nasa.gov/srtm/version2/SRTM3>

1. Using MicroDEM to make SRTM files for map h and map T.

I have posted my latest correction curves for MicroDEM. MicroDem (which is free) can be found at: <http://www.usna.edu/Users/oceano/pguth/website/microdemdown.htm>

My correction curves at: http://rapidshare.com/files/80668059/MicroDEM_Files_BkUp.zip.html

It will change the greyscales of the SRTM files so IL2 will plot the heights properly, albeit with the limitations of the terrain engine. It also allows you to assign textures to the maps automatically and then tweak them later. Basic instructions are below.

Run MicroDEM, load your SRTM map, second icon, once loaded do the following:

To set the correction curves and display to greyscale:

menu:

"**modify**"

"**elevation**"

Select "**colours from table**"

Then select the "**Elevation Table**" button

Load the new table values I have sent

Select the "**Missing**" button

Choose red as your colour

Press "**OK**"

Ensure "**Ocean Check**" and "**Lake Check**" is not ticked

Press "**OK**"

You should now have a greyscale picture and possibly some red areas. The red shows missing data, to get rid of this do the following:

select from the menu:

"**EDIT**"

"**DEM Holes**"

"**Interpolate across holes (Smooth)**" (default value is "2", I use "5")

Select "**OK**"

select "**Yes**"

You may have to experiment with this. Choose a value, the larger the number the larger the "hole" is filled. I sometimes have to use up to 5 or 6 as the number.

Now to set the scale, go to menu:

"**Modify**"

"**Map Area**"

"**Set Map pixel size**"

since we are making a map_h, change the value to "**200.0**" and press "**OK**"

Now to save the map: go to menu:

"**File**"

"**save image**"

I always save as a BMP image then edit and crop in Gimp. For assigning textures etc , the principle is the same, just use the terrain textures colour scale instead.

You can open both files in a spreadsheet to look at and edit the values. You can also use MicroDEM to compile large maps very quickly by joining SRTM file together. I'll add a post on this if people are interested.

2. Making large maps using SRTM data and MicroDEM

Ensure you have downloaded the SRTM data you need from the following link:

<ftp://e0srp01u.ecs.nasa.gov/srtm/version2/SRTM3>

Start up MicroDEM

Click the “**Data Manipulation**” icon, it says IN/OUT on it

On the menu choose “**Merge**”

then “**DEMS**”

then “**DEMs – pick multiple**”

Using the file window pick the DEMs you want to join together, hold down the “shift” or “Ctrl” key to pick multiple files. Do not worry if you don't get all the ones you want, I'll show how to add others later. These will load, you will then be asked to save the file as a DEM, give it a name and save it.

Close the “**Data Manipulation**” window.

Open your new DEM by clicking on the second icon “**Open DEM**” and choosing it from the file browser that opens up. Your new terrain map is ready to be manipulated for use in IL2 as per my previous post above.

But what if you want to add to this new DEM so you can make a bigger map?

Close the map you have opened and click on the “Data Manipulation” icon. If you cannot select it, close MicroDEM and start the program again. Occasionally it is a little buggy.

On the menu choose “**Merge**”

then “**DEMS**”

then “**DEMs – pick single**”

Select the original DEM you saved in the file browser and click “**open**”

The file browser will open again, select either single or multiple SRTM or DEM files to add to the DEM map you started. Every time you select “**Open**” the file browser will load the file then start again to give another opportunity to add more files. Once you have what you, just click “**Cancel**” on the file browser to close it down. You will then be asked to give your latest map a name before it is saved. Do this and then close the “**Data Manipulation**” window. Open up your new map as before and then modify to your hearts content.

3. Using MicroDEM to make map_C files.

There are a couple of methods, and some may be better, but this is the one I generally use. I am assuming that you have finished making map_h and map_T, so the same map is still loaded with all corrections to missing data applied. If you are reloading then make sure you apply missing data corrections as shown earlier.

Now there are two ways to approach this.

Remember that for map_h and map_T we set the map size to 1 pixel = 200m because this is what IL2 uses. But for map_C, IL2 uses 1 pixel = 50m. It also uses RGB = 0 for water, RGB = 255 is land and the greyscales in between are shallow water/smooth shorelines.

Method 1, set the mapsize in MicroDEM to 1 pixel = 50m, but you will have to Blur the edges in Gimp or a similar picture manipulation program to get nice water edges.

Method 2, set MicroDEM to 1 pixel = 200m and scale the image up in your picture program. In Gimp this will automatically give a grayscale/antialiased edge to the map_C.

Let's start at sizing the image:

Go to menu:

"Modify"

"Map Area"

"Set Map pixel size"

since we are making a map_C, change the value to **"200.0"** or **"50.0"** depending on the method you want to try and press **"OK"**

Go to menu:

"modify"

"display parameter"

Select **"Reflectance"**

Then select the **"Vert Exag"** to **"0"** (You have to click in the box and type "0")

Click the **"water"** button, select black for water

The **"colors"** button, select **"grey"**

Ensure the following are ticked, **"Sea Level Check"**, **"Lake Check"** and **Diffuse Reflectance"**.

Click **"OK"**

The map should now be a black for water and grey for land image.

Now to save the map: go to menu:

"File"

"save image"

I always save as a BMP image then edit and crop in Gimp. If you are using Gimp, do the following to get a black and white image. But remember this will remove any grey areas in the map!

Menu:

“**Colours**”

“**Threshold**”

Adjust until you get a black and white image, press “**OK**”. If you are applying a blur or resizing from 200 to 50m per pixel to get "automatic" greyscaling of the water edges, do this now, then save.

All done apart from resizing to a multiple of 32 and using the tools supplied by fly_zo to make a map_C and map_C_table for IL2 as explained elsewhere in the forum.

4. Road and railway textures, an easy method (Updated).

Rail and road use the following greyscale RGB values

Country roads, base RGB = 32

Railway, base RGB = 64

Rail on a sandy bed, base RGB = 96

Highway/main road, base RGB = 128

Highway/main road on a sandy bed, base RGB = 160

Rail on a highway and sandy bed, base RGB = 192

But these change value when they cross a texture of a different RGB value. I.e.

Country roads RGB = 32 when placed on a background texture of RGB = 0

Country roads RGB = 33 when placed on a background texture of RGB = 1

Country roads RGB = 34 when placed on a background texture of RGB = 2 etc

In other words,

Final texture value (RGB) = road or rail RGB + original texture RGB

This can make making a map more difficult. So we could do the following to make it simpler by making the texture and road/rail separately and then combining them with the final **map_T** file using Gimp. We will look at only the highways, RGB = 128 and rail, RGB = 64. For all Road/rail types just use the appropriate RGB value listed above.

1. Open your **map_T** and set this as the background layer.
2. Make another layer with "Layer Fill Type" set to **transparency**, call this layer "Road".
3. Make another layer with "Layer Fill Type" set to **transparency**, call this layer "Rail".
4. Draw in your roads and rail network using the correct RGB values using a 1 (one) pixel wide pen. **Ensure dither is OFF**.
5. Save this file every 10 minutes or so, saving it as an .xcf file is best as it preserves your layers. This file is your work in progress.
6. When you are ready to test your roads you need to merge your layers.

7. Select the **road** layer, ensure that "**mode**" is set to "**addition**". Merge this layer.
8. Do the same for the "**Rail**" layer.
9. You should notice that the road and rail now use different pixel values for the Greyscale RGB, depending on the texture RGB value they cross and even when they cross each other.
10. Go to Layer/transparency/remove alpha channel. If you do not do this it will not save correctly.
11. Save this as a .tga, with no compression. Do not overwrite your original .xcf road/rail working files.

"But I want to amend this in FMB" as well you say "and still be able to separate the road and rail from the map_T"

No problem. The easiest method I have found is this:

1. You should still have your original .xcf file, open it up.
2. Delete or turn off the original background layer.
3. Make a new background layer and colour it RGB = 0 (Black)
4. Merge your road and rail layers into it as described above and save as **map_T.tga**
5. Use this file in your FMB for your map, you will notice that the textures are all the same.
6. Amend your road/rail network as required and save often!
7. When you have finished in FMB, open the new **map_T.tga** file created by FMB with Gimp.
8. Using the "**select by colour tool**" tool select your road network. Copy and paste to a new layer or into your original .xcf file you were using for the road/rail maps.
9. You will notice that where road and rail cross, they make an RGB value of 192, copy this as well and paste onto the same layer as your road.
10. On the road layer you have just created, select these RGB = 192 pixels using the "**select by colour tool**" Change this colour to RGB = 128. Voila! Your road network back in a form you can easily manipulate in Gimp.
11. Repeat the same process for your rail network using an RGB = 64.

Why would you want to do this?

Well, sometimes it is easier to amend your road and rail in Gimp, sometime in the IL2 FMB and it is useful to be able to flip between the two.

It is also useful because you can use it easily for en_01/02 and 03.tga!