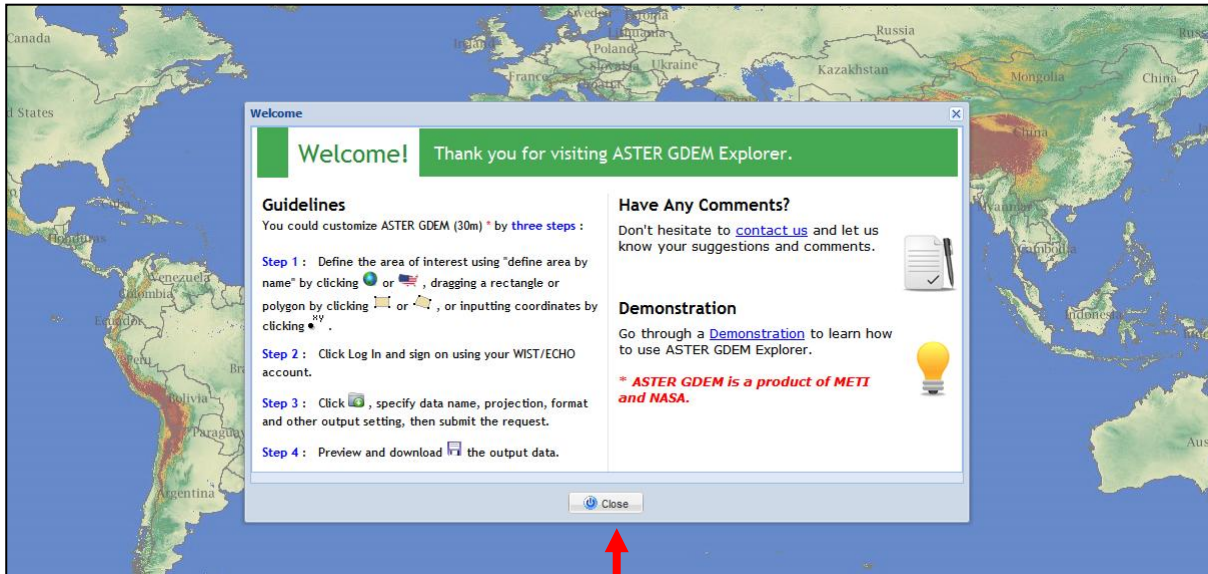




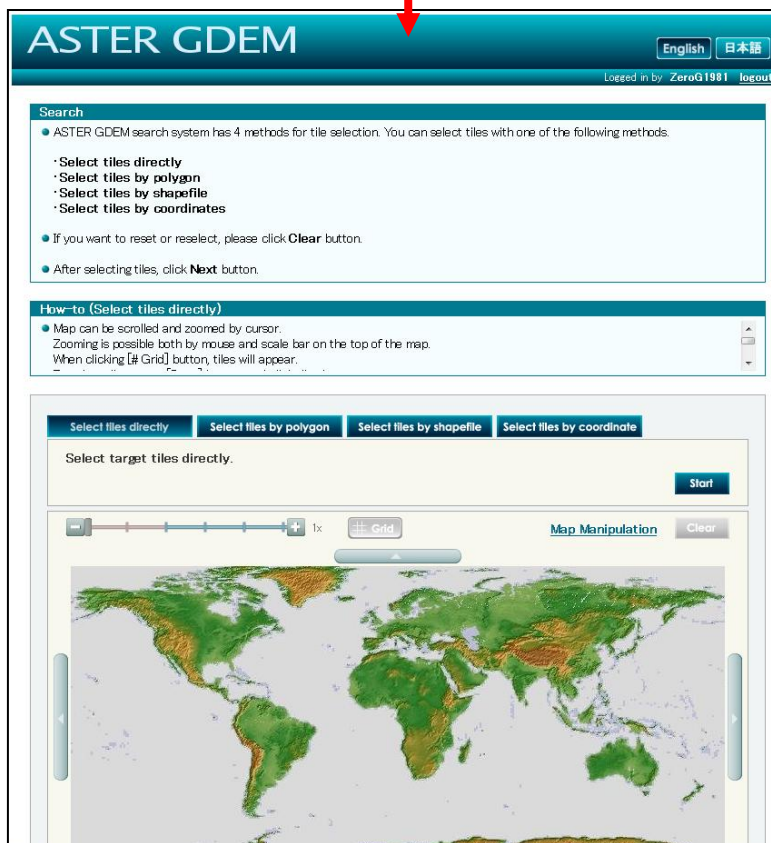
STEP 1: ACQUIRE, CONVERT AND IMPORT A REAL LIFE HEIGHTMAP

Get a DEM ([Digital Elevation Model](#)) of your desired area on the planet. You can find these files anywhere on the web. However, personally, I recommend a NASA website from the [ASTER](#) project, as the data from this project has a fairly high resolution and its totally free of charge. To get a better resolution, you have to pay quite a lot. The acquisition of the data is easy to understand. You have just to go through the registering process and the rest is self-explanatory: select your desired area and download the data for it...



[ASTER GDEM EXPLORER 1](#)

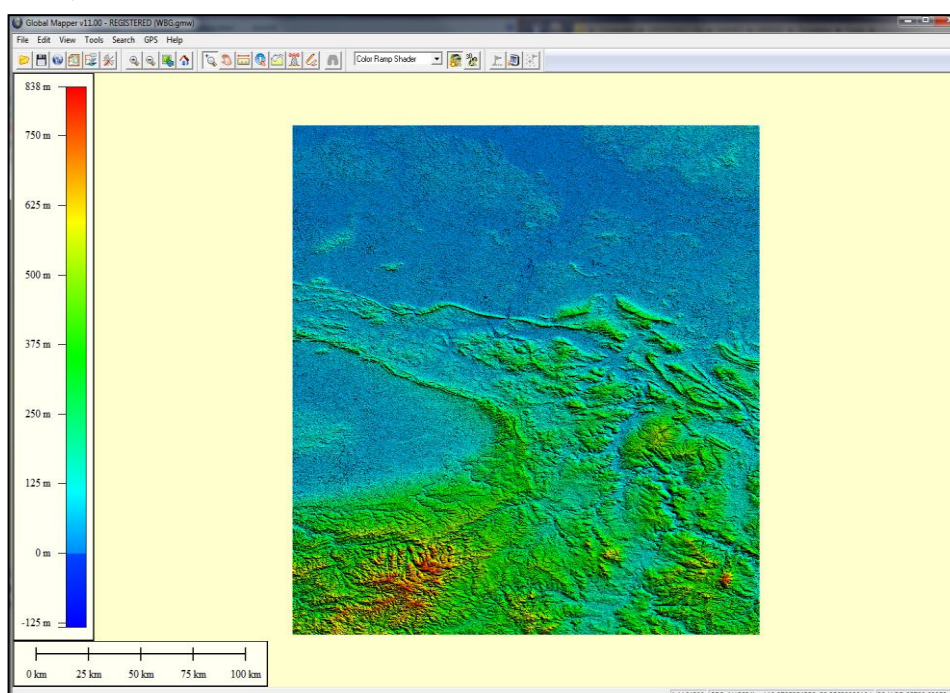
[ASTER GDEM EXPLORER 2](#)



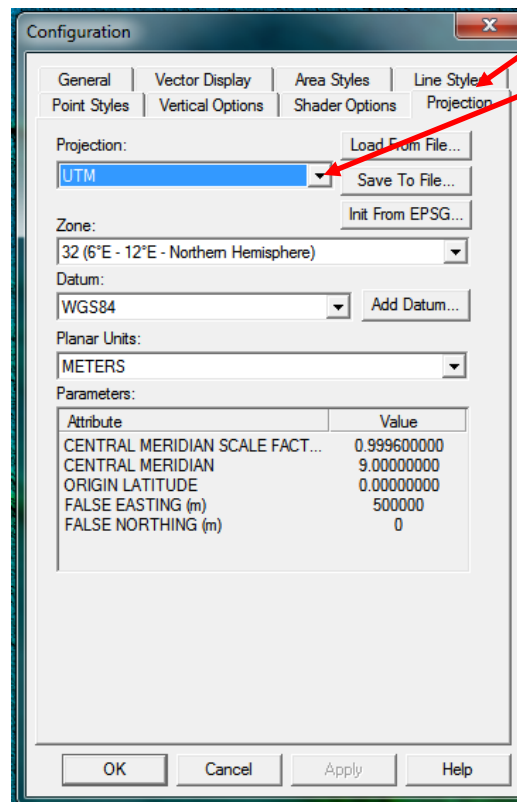
You will most likely get "SILC TIFF" files after the download, which are named: **ASTGTM_NXXEXX_dem**, depending on your desired area. Dump the "**_num**" files, you don't need them for the heightmap. For the conversion of these DEM-TIFFS to a Visitor-readable format, I recommend [GLOBAL MAPPER](#). In this tutorial, I use version 11:



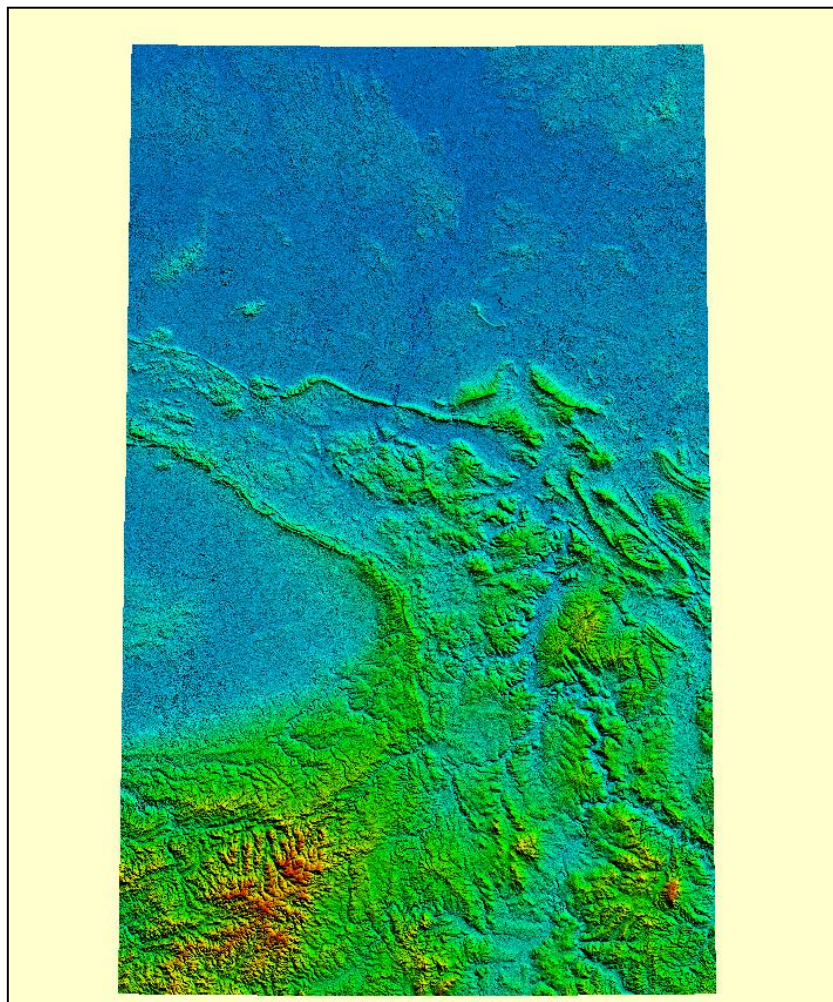
Execute Global Mapper, in main screen click **OPEN YOUR OWN DATA FILES**. Select all downloaded tiles (if you should have more than 1) and the program will automatically merge them. After that, the screen with the DEM will look like this:



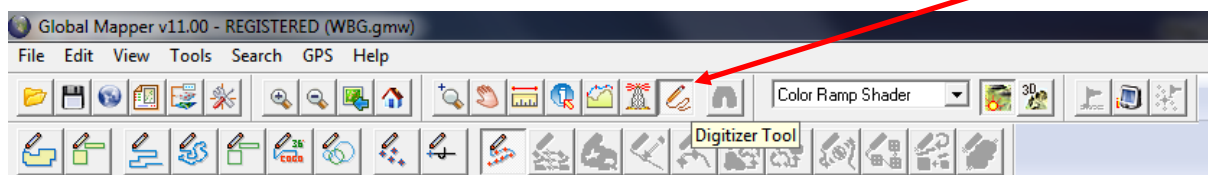
Goto **TOOLS, CONFIGURE**, select **PROJECTION** tab, under **PROJECTION** select "**UTM**".



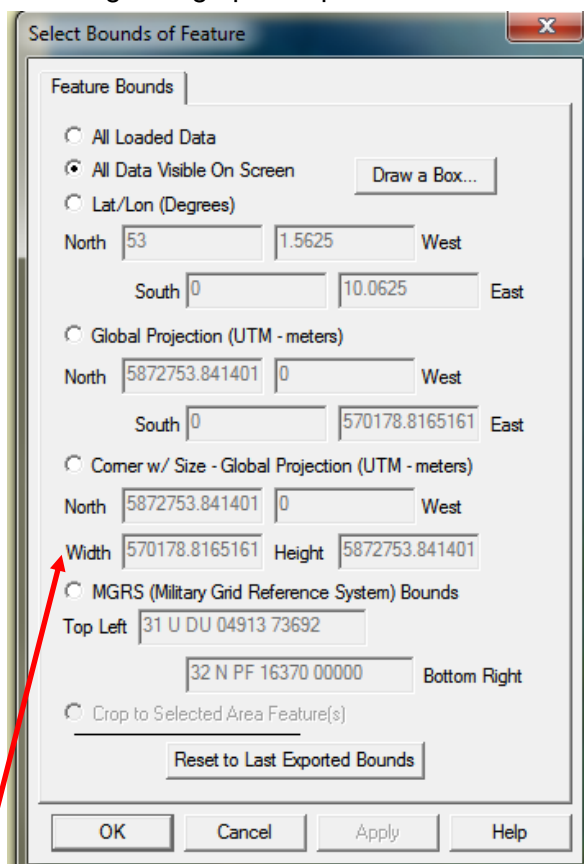
If you did it properly, the merged DEM should look somewhat like this now:



Now you need to select a map area from this raw DEM. To do this select the **DIGITIZER** tool (pen icon):



Then do a rightclick right on the DEM, in the appearing context menu you select **CREATE AREA SHAPES**, then **CREATE RECTANGULAR/SQUARE AREA (SPECIFY COORDINATES)**. The following dialog opens up:

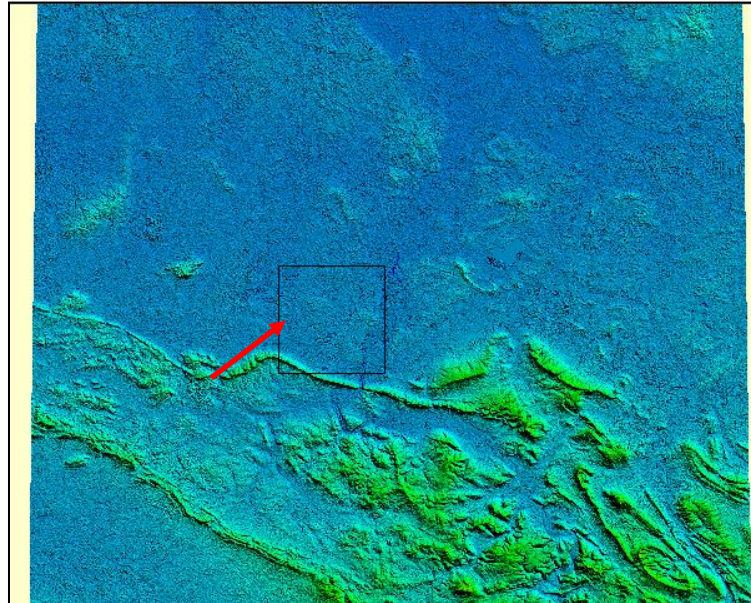


You go for **CORNER w/ Size - Global Projection (UTM - meters)**. Now you have to decide how big your ARMA2 map shall be and enter the according values in the **Width** and **Height** field. Note that this has to be an exponentiation of 2. I recommend one of these values:

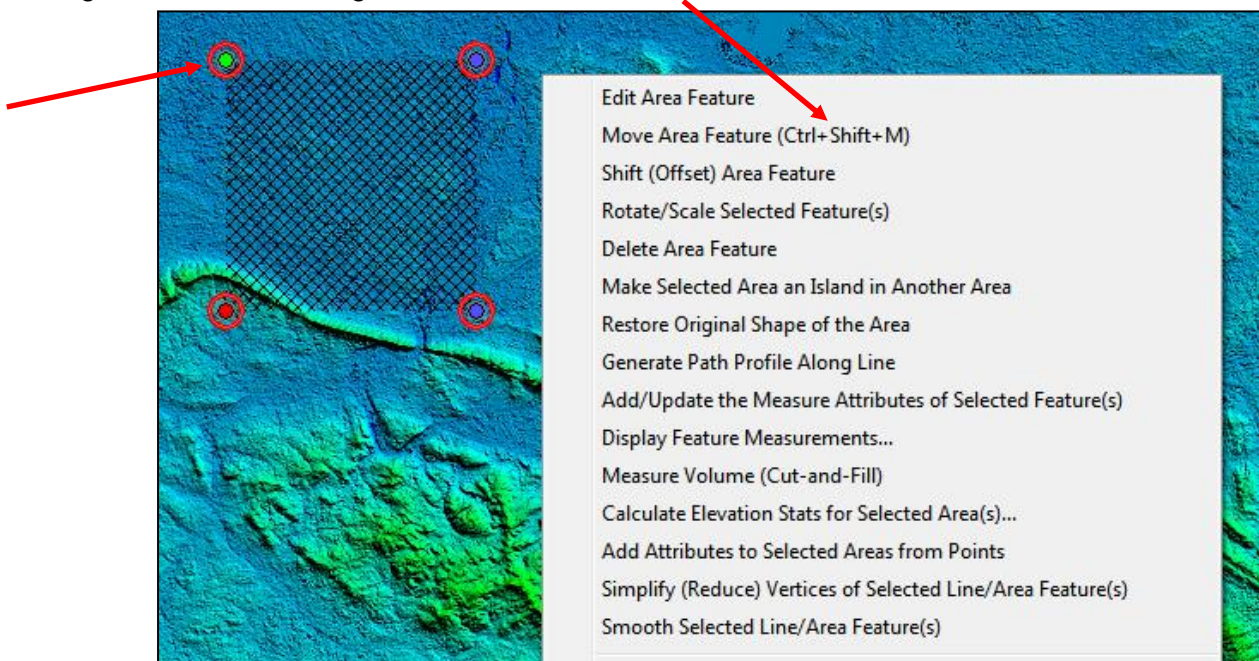
5120x5120 (~25km²)
 10240x10240 (~100km²)
 20480x20480 (~400km²)

For a comparison: Chernarus is 15x15km i.e. 225km², while Takistan is 13x13km i.e. 169km². Most user maps out there (that have been released yet) are either way 5x5km or 10x10km in size. Note that the larger the land mass is, the more it has to be filled with objects. That means more work for you, a later release date and more CPU load. Find a good balance here and remember: you don't work several months on a map just for yourself, you work for users that want to play on it.

When you close this dialog, a naming dialog appears. Name the square area the way you want. The screen should look like this:



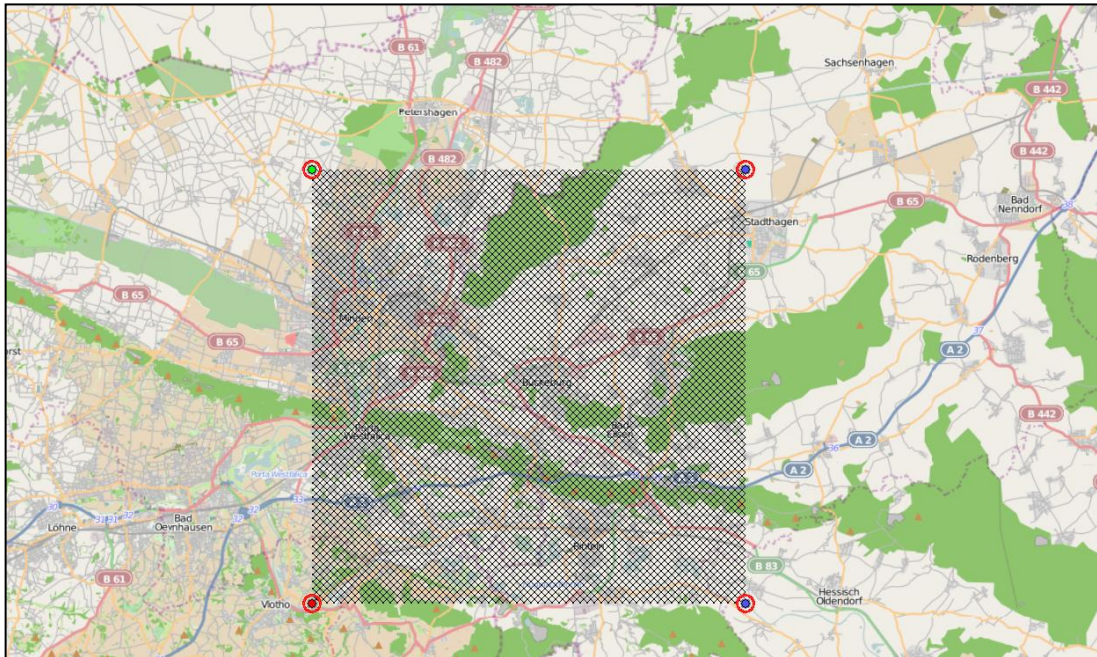
What you want to do now is to move that square to the area we want to have it. At first, you unhide the so-called vertices of the square. Do a rightclick and in the context menu, select the bottom option **SHOW AREA AND LINE VERTICES**. Now you can move the square where ever you want it to by selecting the whole square with the mouse and left click, then a right click and selecting **MOVE AREA FEATURE** from the context menu:



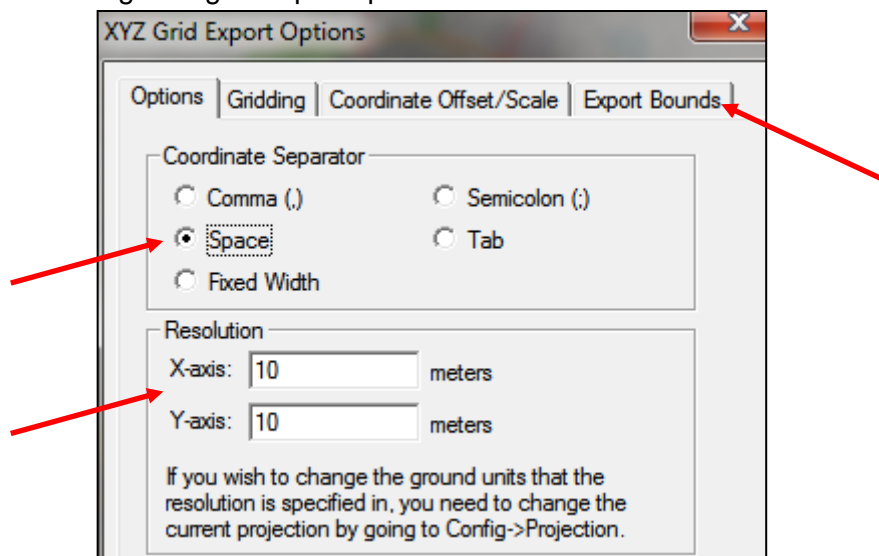
To get a better idea where your selection is located in real life, click on **DOWNLOAD ONLINE DATA** (globe icon):



In the upcoming dialog, I recommend you select **OPEN STREET MAPS**. Your screen then:

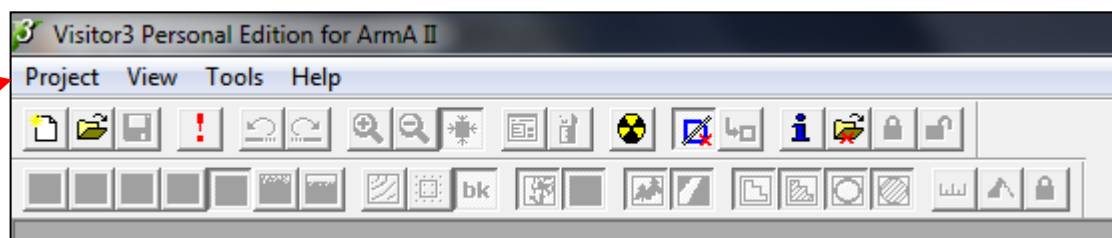


Now select your desired area by moving the square into according position. For exporting the underlying height data into a visitor-readable format, you have to keep the square area selected, go to **FILE**, then **EXPORT RASTER AND ELEVATION DATA** and the **EXPORT XYZ GRID**. The following dialog will open up:

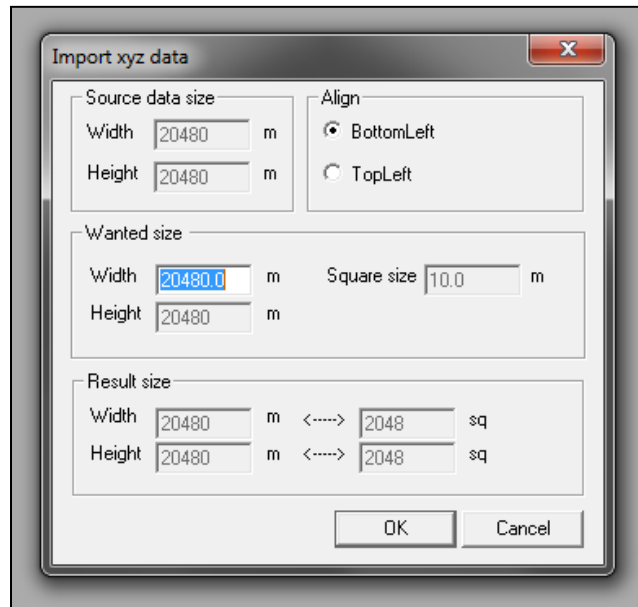


In the **OPTIONS** tab, select **SPACE** under **COORDINATE SEPARATOR** and under **RESOLUTION 10** meters both for X and Y axis. In **EXPORT BOUNDS** tab, select the bottom option **CROP TO SELECTED AREA FEATURES**. After clicking **OK**, a dialog to save the *.xyz file will appear.

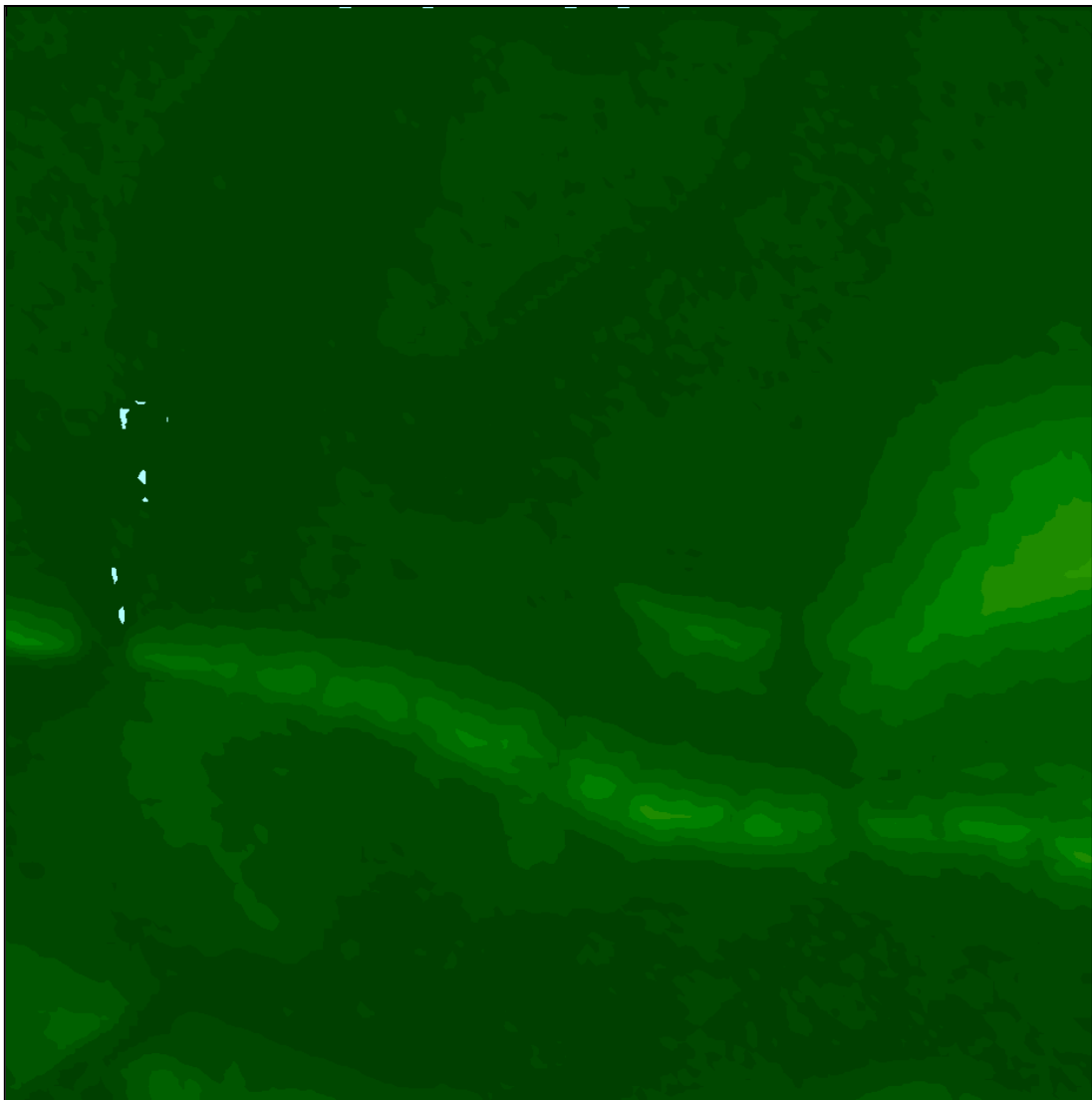
Now we want to import that *.xyz file into [VISITOR 3](#). In the main window, click on **PROJECT**, then **OPEN** and in the following dialog you select *.xyz file and select the file you saved with **GLOBAL MAPPER**.



Depending on the file size, it might take some seconds now. Then the following dialog appears:

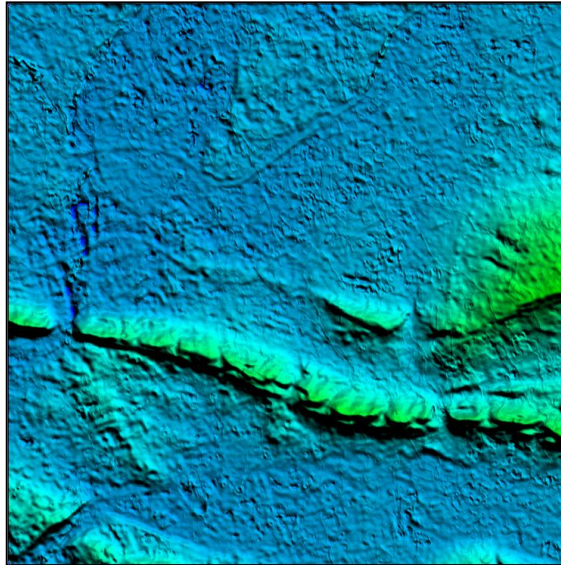


Now you see that **VISITOR 3** exactly recognized the values we entered in **GLOBAL MAPPER**; press **OK**. The result after some few more seconds and a zoomout:

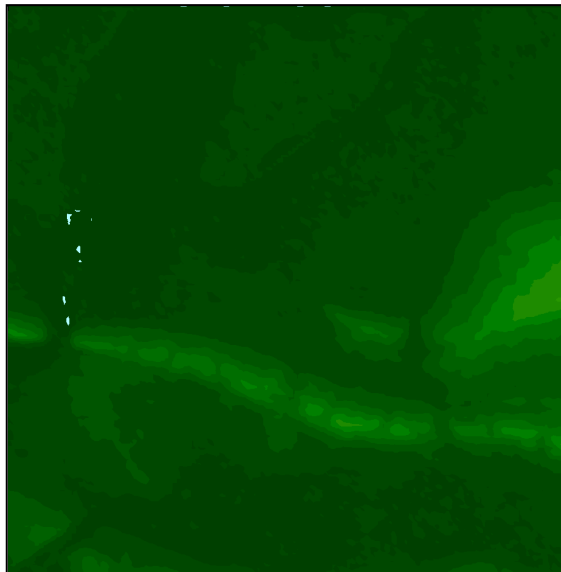


The import is done! Now to convince yourself that everything worked properly:

GLOBAL MAPPER ASTER DGEM



VISITOR 3 AFTER XYZ IMPORT



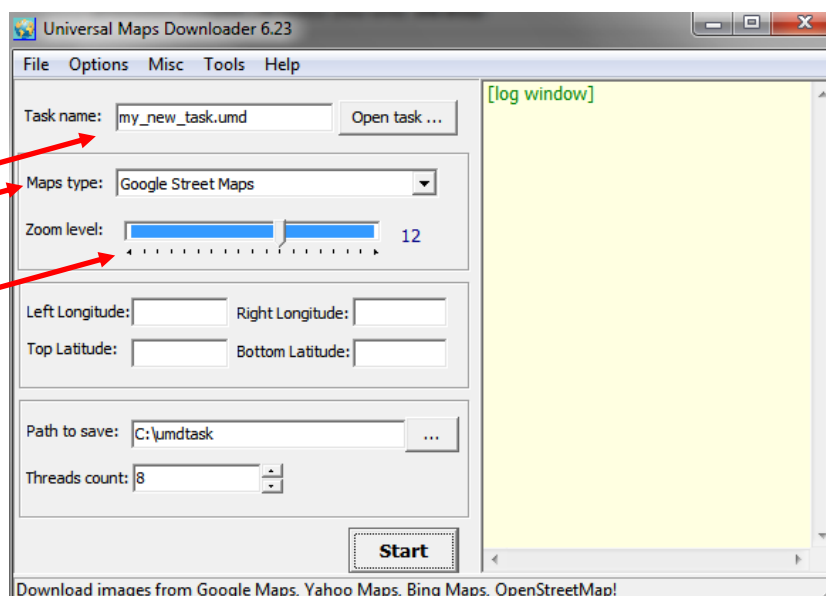
GLOBAL MAPPER OPEN STREET MAPS



STEP 2: ACQUIRE AND IMPORT REAL LIFE SATMAPS

After we have done the heightmap, we now need satellite textures that will be drawn by the game in bigger distances, i.e. on the horizon, while a HALO jump or flight in a plane. Note that a too detailed satellite map might look crappy in game, because you don't have all the infrastructure objects available to place them on the 2D real life images. So I recommend you either way to choose simple satellite maps (i.e. desert or little infrastructure) or simply use the original satellite images as a mask background mask for placing objects in **VISITOR 3** or the **ARMA 2 editor**. We will focus on this topic later on.

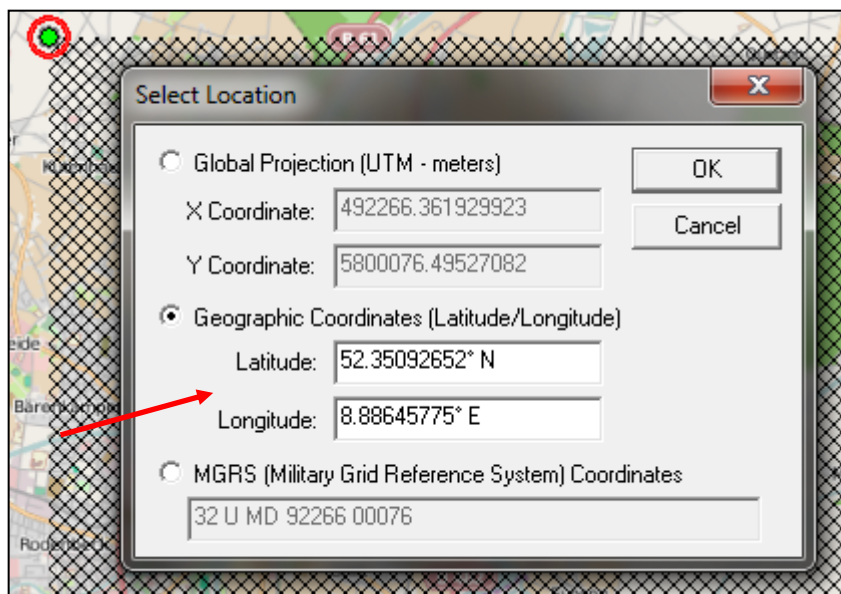
To get maps with a high detail level for free, we have to download them from a source like **GOOGLE**, **YAHOO**, **BING** or **OPEN STREET**. These images are watermarked for copyright issues, but as you never choose the maximum detail, that won't harm you while in game. You also don't want to download thousands of tiles and stitch them together manually. There is a clever software that does the job for us! We need another third-party program now. It is called [UNIVERSAL MAPS DOWNLOADER](#).



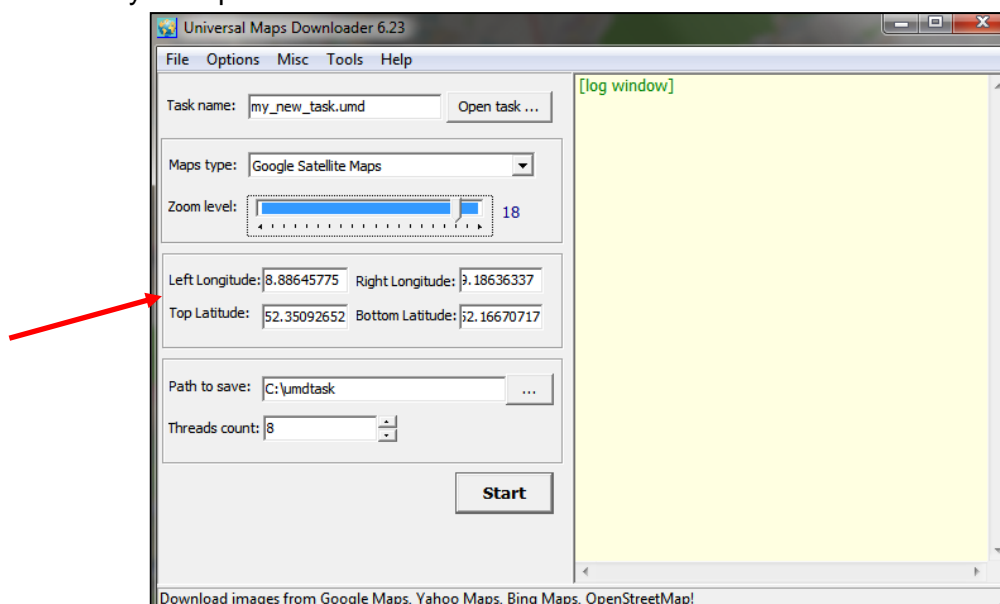
The next steps are quite simple:

1. Enter a **TASK NAME** of your choice.
2. Select the desired **MAPS TYPE**. They have different benefits. For example, street maps are for sure nothing you would like to walk on in game..but for placing roads, large forests or place names, it will be of great help. Also some providers host satellite images that have been taken in the wintertime. This will make it easier for you to define where needle or leaf trees should be placed or hidden objects in the forest are located. Also interesting are hybrid maps.
3. For the **ZOOM LEVEL**, I recommend you not to take the maximum resolution. Otherwise, the merged image will get far too big to handle with other tools like PHOTOSHOP or VISITOR on a normal users' PC. If you create a 20x20km map, I recommend you a zoom level that creates about 12000 tiles, which will be 17 in case of Google Satellite Maps. That's enough to work with.

4. For the **COORDINATES** you have to get back to **GLOBAL MAPPER** and look for the top left and bottom right corner vertice of the square we created in step 1. Select one vertice with a left click, then right click to open up the context menu and press **SET POSITION OF SELECTED VERTICES**. The following dialog will appear:



When selecting **GEOGRAPHIC COORDINATES**, you can simply copy the LAT/LONG values and paste them into **UNIVERSAL MAPS DOWNLOADER**. Do this for the top left and bottom right vertice of your square. Watch the correct values for LAT/LONG:

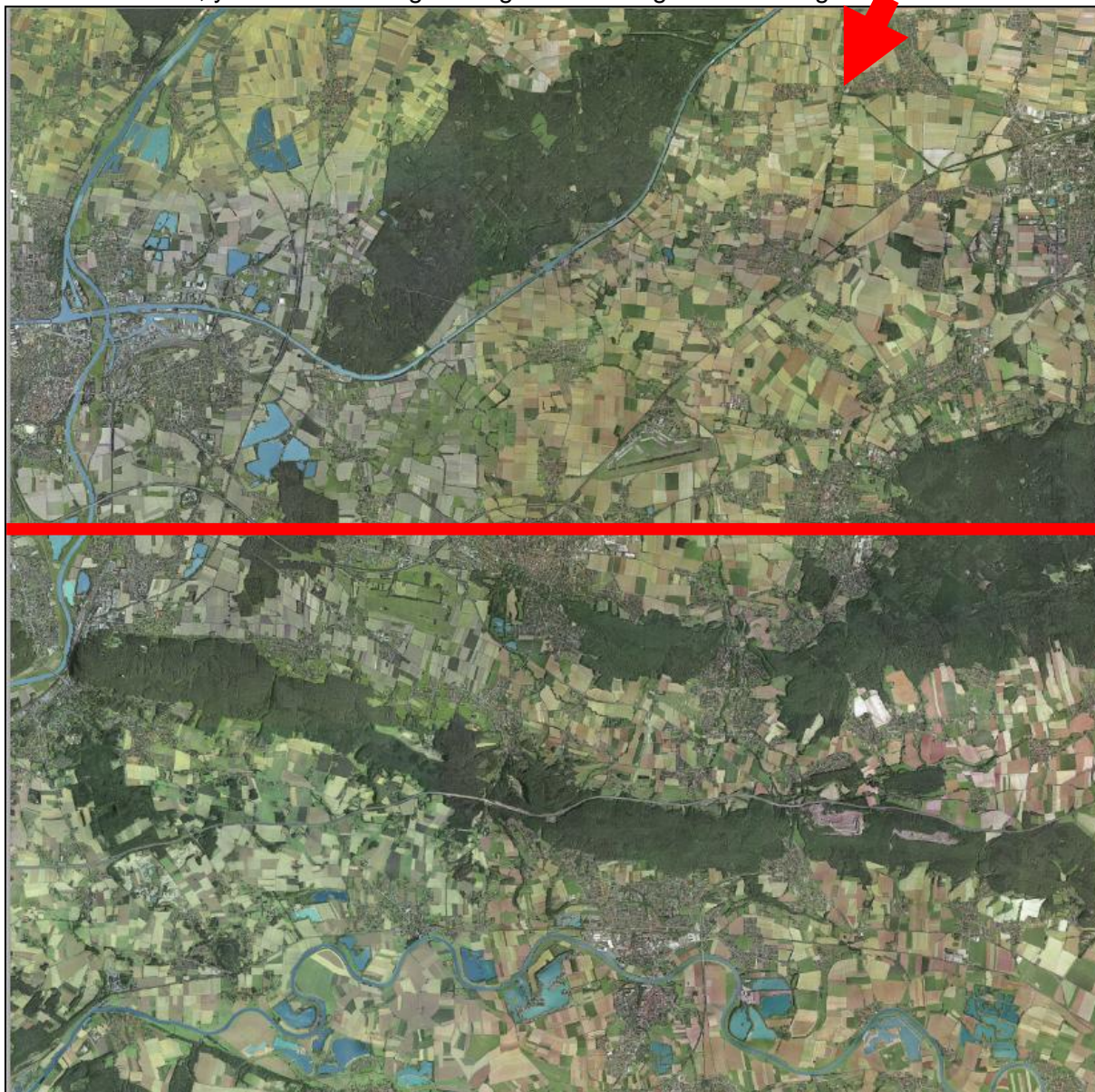


Now you just have to set your **PATH TO SAVE**. The **THREADS COUNT** determines how many connections are uphold to the map provider. Increase this value if you don't want to wait until 12000 files have been downloaded. However, note that especially **GOOGLE** might block your IP when you download maps with too many threads at the same time. Then you would have to wait for unblock. A good way to avoid this blockade is to reduce the threads count. It doesn't take too long after all, the result is just awesome and in the end you need patience in mapmaking anyhow.

Press **START**.

After the download process is finished, you should go for **TOOLS** and then **RE-DOWNLOAD FAILED IMAGES**. When you download 12000 files, there might be some which don't get transferred properly.

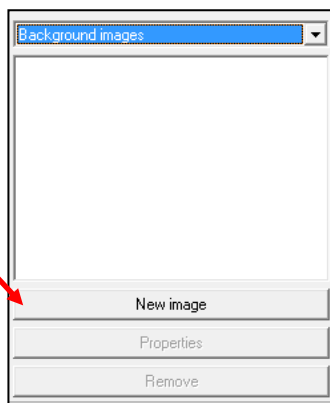
Then stay in the **TOOLS** section and select **MAP COMBINER**. After selecting the project name and folder, your 12000 files get merged to one big satellite image



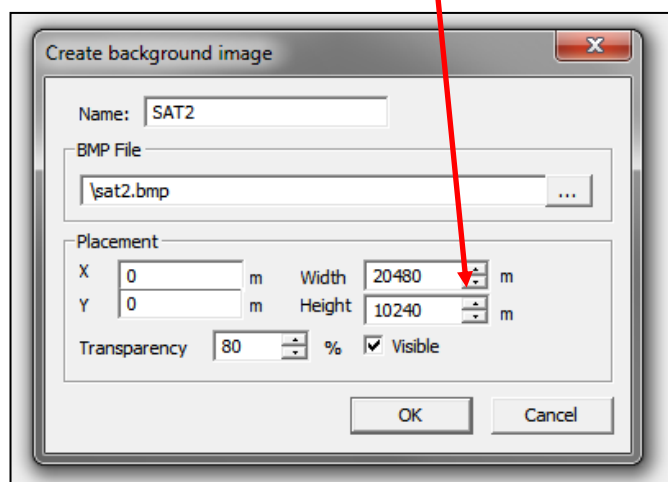
Open up the image in a powerful editor like **PHOTOSHOP**. Now compare the map edges carefully, if they end on the same spots like your defined 20x20km square does in **GLOBAL MAPPER**, using the **OPEN STREET MAP** view there. Most likely, the big downloaded file from UMD will be a little too big because the maptiles do not end on the spots you defined of course. How could anyone have known your square selection when cutting the tiles for the map server? So just cut away the stuff that's not meant to be there and you are good to go.

After that, split the image in the middle and save the both halves as *.bmp files.

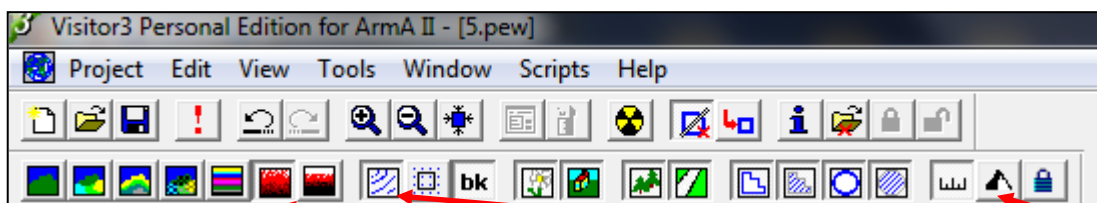
Go back to **VISITOR 3**. In the dialog box on the right select **BACKGROUND IMAGES**. Press **NEW IMAGE**.



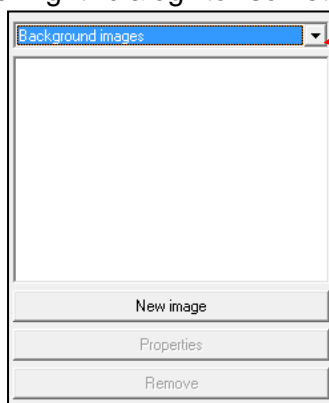
In the following dialog, choose your desired name and select one of the two previously saved files. Choose the bottom image file first and fill in these settings (in case your map is 20x20km):



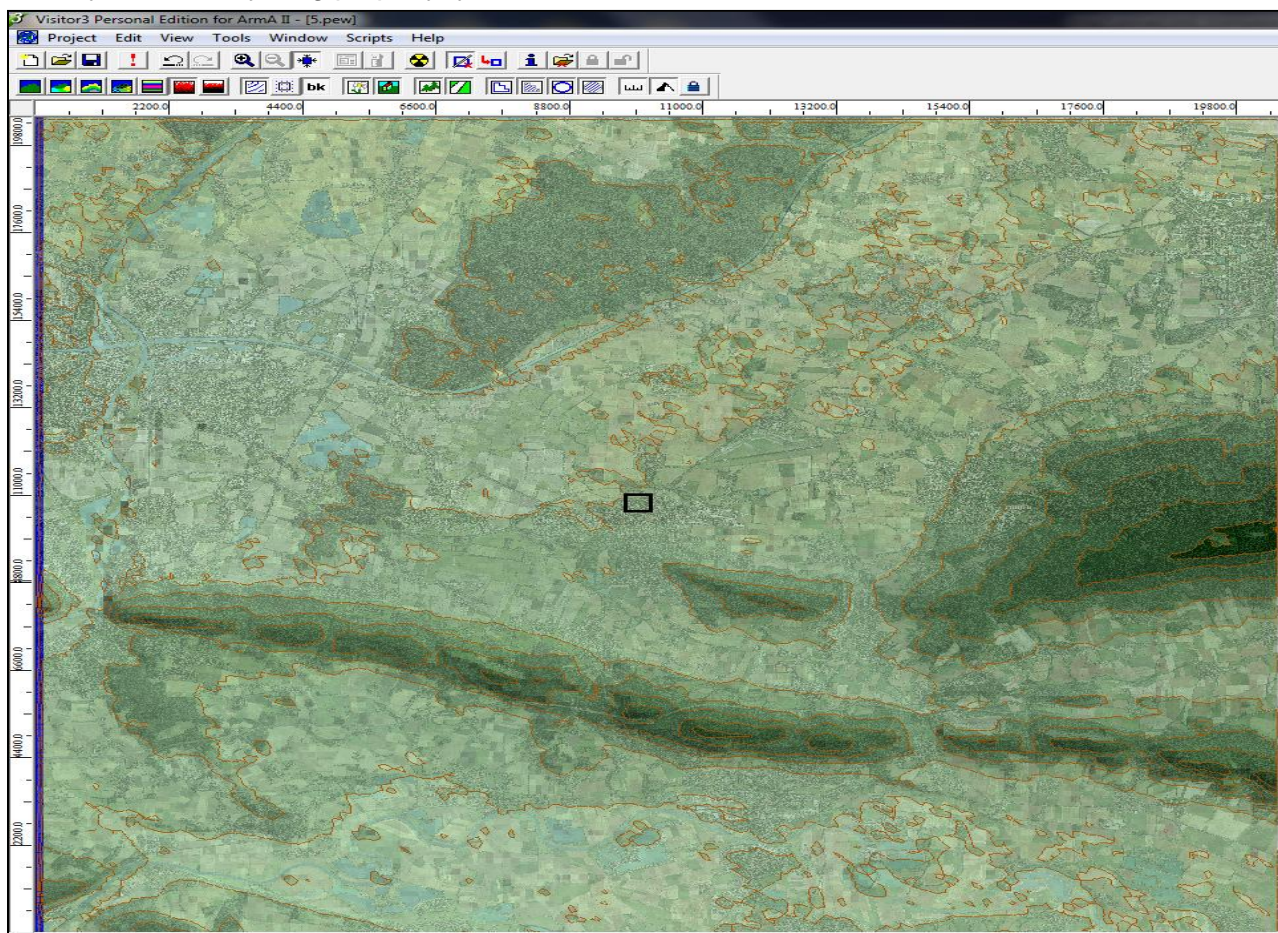
For being able to align it to the height map properly later on, choose a fairly high **TRANSPARENCY** between 60-80%. Then click **OK**. Do it for the top image file in the same way, setting **PLACEMENT X=0** and **PLACEMENT Y=10240**.



After that, you should activate **ELEVATION GRAY SCALE**, **SHOW CONTOURS** (and **SHOW SHADOWS**). Switch the right dialog to something else than **BACKGROUND IMAGES**.



If you did everything properly, your **VISITOR 3** screen should look like this:



If the satellite image should be off, you can easily adjust it by zooming in, selecting **BACKGROUND IMAGE** in the right dialog and align mountain contours to mountain images or lake/river depths to lake/river images. **SAVE** the project.

NOW YOU ARE DONE FOR THE EASY AND FUN PART :-D !!!

