

How to make accurate CS maps using Google Earth

-by Huib Versloot-

This article is an extension of my earlier article on how to make maps using graphics software and digital map scans. That article can be found here:

http://www.theblitz.org/articles/scenario_design.php?id=163

In some cases the designer does not have detailed maps available. A good alternative is using Google Earth. Google Earth displays the world as it is now, and does that in great detail. Some areas are covered in great detail by aerial photographs, while others are covered in lower resolution satellite images. In all circumstances Google Earth gives an accurate view on topographical level. One thing one has to bear in mind is the same as when using modern maps, and those are the changes by human activity that took place over the last 60 years. Landscapes do not change too much in general, but one has to ask questions like: 'did this highway exist in 1944, or 'what was the extent of urbanisation of this place in 1944'. Sometimes one has to 'guesstimate', sometimes written sources provide information on these matters.

Step 1: Making an 'hex numbered area' in CS

First thing we have to do is to make an image of an empty CS map with the hex numbers on it. I decided to make a 10 x 10 Km map (40x40 hexes), make 2 screen prints and paste these together in Paintshop Pro, cutting away the edges to leave only the hex numbers. We save the image to a location on our hard drive.

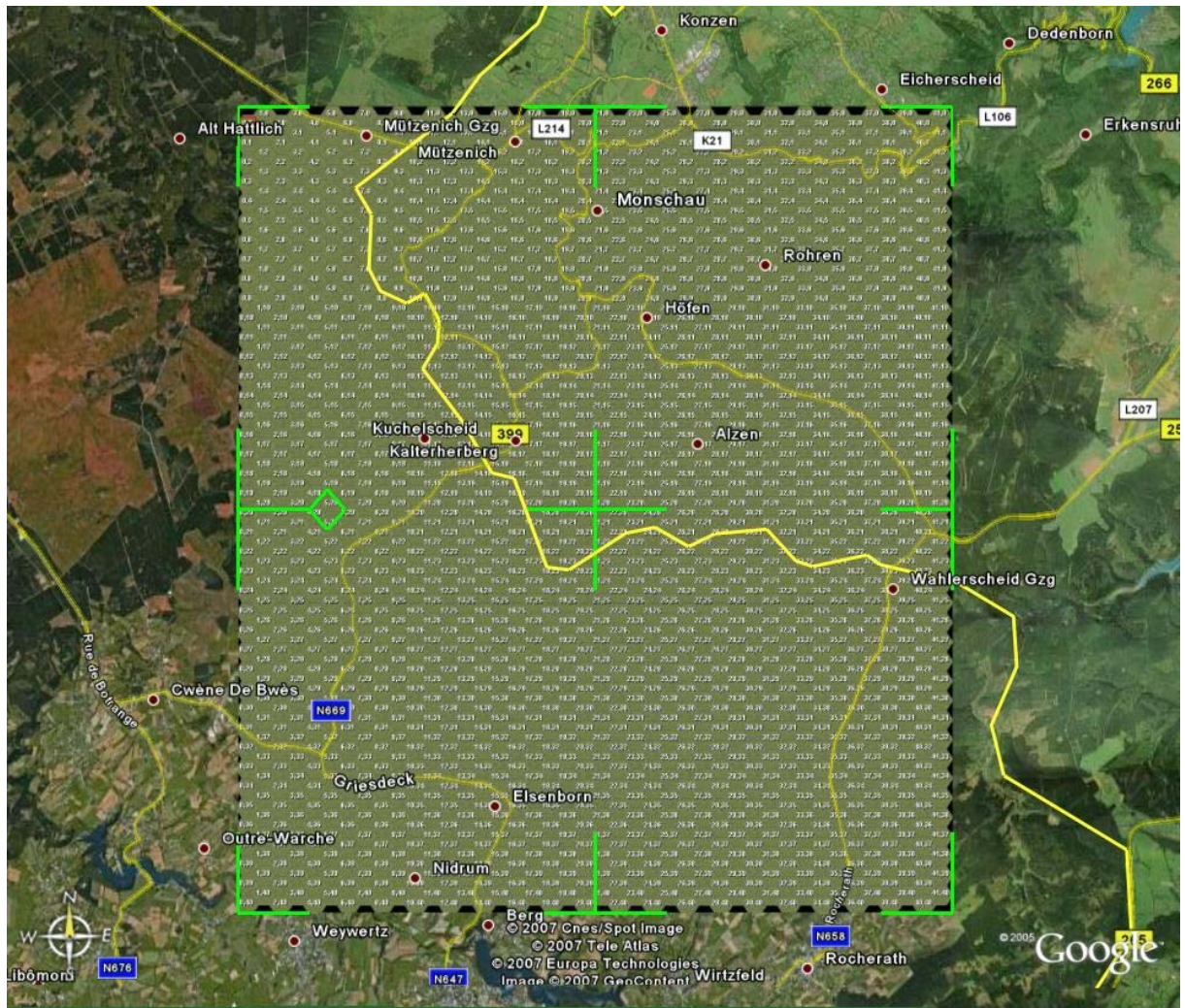
0.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0	14.0	15.0	16.0	17.0	18.0	19.0	20.0	21.0	22.0	23.0	24.0	25.0	26.0	27.0	28.0	29.0	30.0	31.0	32.0	33.0	34.0	35.0	36.0	37.0	38.0	39.0	40.0
	1.1	2.1	3.1	4.1	5.1	6.1	7.1	8.1	9.1	10.1	11.1	12.1	13.1	14.1	15.1	16.1	17.1	18.1	19.1	20.1	21.1	22.1	23.1	24.1	25.1	26.1	27.1	28.1	29.1	30.1	31.1	32.1	33.1	34.1	35.1	36.1	37.1	38.1	39.1	40.1
0.1	1.2	2.1	3.2	4.1	5.1	6.1	7.1	8.1	9.1	10.1	11.1	12.1	13.1	14.1	15.1	16.1	17.1	18.1	19.1	20.1	21.1	22.1	23.1	24.1	25.1	26.1	27.1	28.1	29.1	30.1	31.1	32.1	33.1	34.1	35.1	36.1	37.1	38.1	39.1	40.1
0.2	1.2	2.2	3.2	4.2	5.2	6.2	7.2	8.2	9.2	10.2	11.2	12.2	13.2	14.2	15.2	16.2	17.2	18.2	19.2	20.2	21.2	22.2	23.2	24.2	25.2	26.2	27.2	28.2	29.2	30.2	31.2	32.2	33.2	34.2	35.2	36.2	37.2	38.2	39.2	40.2
0.3	1.3	2.3	3.3	4.3	5.3	6.3	7.3	8.3	9.3	10.3	11.3	12.3	13.3	14.3	15.3	16.3	17.3	18.3	19.3	20.3	21.3	22.3	23.3	24.3	25.3	26.3	27.3	28.3	29.3	30.3	31.3	32.3	33.3	34.3	35.3	36.3	37.3	38.3	39.3	40.3
0.4	1.4	2.4	3.4	4.4	5.4	6.4	7.4	8.4	9.4	10.4	11.4	12.4	13.4	14.4	15.4	16.4	17.4	18.4	19.4	20.4	21.4	22.4	23.4	24.4	25.4	26.4	27.4	28.4	29.4	30.4	31.4	32.4	33.4	34.4	35.4	36.4	37.4	38.4	39.4	40.4
0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5	25.5	26.5	27.5	28.5	29.5	30.5	31.5	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5	40.5
0.6	1.6	2.6	3.6	4.6	5.6	6.6	7.6	8.6	9.6	10.6	11.6	12.6	13.6	14.6	15.6	16.6	17.6	18.6	19.6	20.6	21.6	22.6	23.6	24.6	25.6	26.6	27.6	28.6	29.6	30.6	31.6	32.6	33.6	34.6	35.6	36.6	37.6	38.6	39.6	40.6
0.7	1.7	2.7	3.7	4.7	5.7	6.7	7.7	8.7	9.7	10.7	11.7	12.7	13.7	14.7	15.7	16.7	17.7	18.7	19.7	20.7	21.7	22.7	23.7	24.7	25.7	26.7	27.7	28.7	29.7	30.7	31.7	32.7	33.7	34.7	35.7	36.7	37.7	38.7	39.7	40.7
0.8	1.8	2.8	3.8	4.8	5.8	6.8	7.8	8.8	9.8	10.8	11.8	12.8	13.8	14.8	15.8	16.8	17.8	18.8	19.8	20.8	21.8	22.8	23.8	24.8	25.8	26.8	27.8	28.8	29.8	30.8	31.8	32.8	33.8	34.8	35.8	36.8	37.8	38.8	39.8	40.8
0.9	1.9	2.9	3.9	4.9	5.9	6.9	7.9	8.9	9.9	10.9	11.9	12.9	13.9	14.9	15.9	16.9	17.9	18.9	19.9	20.9	21.9	22.9	23.9	24.9	25.9	26.9	27.9	28.9	29.9	30.9	31.9	32.9	33.9	34.9	35.9	36.9	37.9	38.9	39.9	40.9
0.10	1.10	2.10	3.10	4.10	5.10	6.10	7.10	8.10	9.10	10.10	11.10	12.10	13.10	14.10	15.10	16.10	17.10	18.10	19.10	20.10	21.10	22.10	23.10	24.10	25.10	26.10	27.10	28.10	29.10	30.10	31.10	32.10	33.10	34.10	35.10	36.10	37.10	38.10	39.10	40.10
0.11	1.11	2.11	3.11	4.11	5.11	6.11	7.11	8.11	9.11	10.11	11.11	12.11	13.11	14.11	15.11	16.11	17.11	18.11	19.11	20.11	21.11	22.11	23.11	24.11	25.11	26.11	27.11	28.11	29.11	30.11	31.11	32.11	33.11	34.11	35.11	36.11	37.11	38.11	39.11	40.11
0.12	1.12	2.12	3.12	4.12	5.12	6.12	7.12	8.12	9.12	10.12	11.12	12.12	13.12	14.12	15.12	16.12	17.12	18.12	19.12	20.12	21.12	22.12	23.12	24.12	25.12	26.12	27.12	28.12	29.12	30.12	31.12	32.12	33.12	34.12	35.12	36.12	37.12	38.12	39.12	40.12
0.13	1.13	2.13	3.13	4.13	5.13	6.13	7.13	8.13	9.13	10.13	11.13	12.13	13.13	14.13	15.13	16.13	17.13	18.13	19.13	20.13	21.13	22.13	23.13	24.13	25.13	26.13	27.13	28.13	29.13	30.13	31.13	32.13	33.13	34.13	35.13	36.13	37.13	38.13	39.13	40.13
0.14	1.14	2.14	3.14	4.14	5.14	6.14	7.14	8.14	9.14	10.14	11.14	12.14	13.14	14.14	15.14	16.14	17.14	18.14	19.14	20.14	21.14	22.14	23.14	24.14	25.14	26.14	27.14	28.14	29.14	30.14	31.14	32.14	33.14	34.14	35.14	36.14	37.14	38.14	39.14	40.14
0.15	1.15	2.15	3.15	4.15	5.15	6.15	7.15	8.15	9.15	10.15	11.15	12.15	13.15	14.15	15.15	16.15	17.15	18.15	19.15	20.15	21.15	22.15	23.15	24.15	25.15	26.15	27.15	28.15	29.15	30.15	31.15	32.15	33.15	34.15	35.15	36.15	37.15	38.15	39.15	40.15
0.16	1.16	2.16	3.16	4.16	5.16	6.16	7.16	8.16	9.16	10.16	11.16	12.16	13.16	14.16	15.16	16.16	17.16	18.16	19.16	20.16	21.16	22.16	23.16	24.16	25.16	26.16	27.16	28.16	29.16	30.16	31.16	32.16	33.16	34.16	35.16	36.16	37.16	38.16	39.16	40.16
0.17	1.17	2.17	3.17	4.17	5.17	6.17	7.17	8.17	9.17	10.17	11.17	12.17	13.17	14.17	15.17	16.17	17.17	18.17	19.17	20.17	21.17	22.17	23.17	24.17	25.17	26.17	27.17	28.17	29.17	30.17	31.17	32.17	33.17	34.17	35.17	36.17	37.17	38.17	39.17	40.17
0.18	1.18	2.18	3.18	4.18	5.18	6.18	7.18	8.18	9.18	10.18	11.18	12.18	13.18	14.18	15.18	16.18	17.18	18.18	19.18	20.18	21.18	22.18	23.18	24.18	25.18	26.18	27.18	28.18	29.18	30.18	31.18	32.18	33.18	34.18	35.18	36.18	37.18	38.18	39.18	40.18
0.19	1.19	2.19	3.19	4.19	5.19	6.19	7.19	8.19	9.19	10.19	11.19	12.19	13.19	14.19	15.19	16.19	17.19	18.19	19.19	20.19	21.19	22.19	23.19	24.19	25.19	26.19	27.19	28.19	29.19	30.19	31.19	32.19	33.19	34.19	35.19	36.19	37.19	38.19	39.19	40.19
0.20	1.20	2.20	3.20	4.20	5.20	6.20	7.20	8.20	9.20	10.20	11.20	12.20	13.20	14.20	15.20	16.20	17.20	18.20	19.20	20.20	21.20	22.20	23.20	24.20	25.20	26.20	27.20	28.20	29.20	30.20	31.20	32.20	33.20	34.20	35.20	36.20	37.20	38.20	39.20	40.20
0.21	1.21	2.21	3.21	4.21	5.21	6.21	7.21	8.21	9.21	10.21	11.21	12.21	13.21	14.21	15.21	16.21	17.21	18.21	19.21	20.21	21.21	22.21	23.21	24.21	25.21	26.21	27.21	28.21	29.21	30.21	31.21	32.21	33.21	34.21	35.21	36.21	37.21	38.21	39.21	40.21
0.22	1.22	2.22	3.22	4.22	5.22	6.22	7.22	8.22	9.22	10.22	11.22	12.22	13.22	14.22	15.22	16.22	17.22	18.22	19.22	20.22	21.22	22.22	23.22	24.22	25.22	26.22	27.22	28.22	29.22	30.22	31.22	32.22	33.22	34.22	35.22	36.22	37.22	38.22	39.22	40.22
0.23	1.23	2.23	3.23	4.23	5.23	6.23	7.23	8.23	9.23	10.23	11.23	12.23	13.23	14.23	15.23	16.23	17.23	18.23	19.23	20.23	21.23	22.23	23.23	24.23	25.23	26.23	27.23	28.23	29.23	30.23	31.23	32.23	33.23	34.23	35.23	36.23	37.23	38.23	39.23	40.23
0.24	1.24	2.24	3.24	4.24	5.24	6.24	7.24	8.24	9.24	10.24	11.24	12.24	13.24	14.24	15.24	16.24	17.24	18.24	19.24	20.24	21.24	22.24	23.24	24.24	25.24	26.24	27.24	28.24	29.24	30.24	31.24	32.24	33.24	34.24	35.24	36.24	37.24	38.24	39.24	40.24
0.25	1.25	2.25	3.25	4.25	5.25	6.25	7.25	8.25	9.25	10.25	11.25	12.25	13.25	14.25	15.25	16.25	17.25	18.25	19.25	20.25	21.25	22.25	23.25	24.25	25.25	26.25	27.25	28.25	29.25	30.25	31.25	32.25	33.25	34.25	35.25	36.25	37.25	38.25	39.25	40.25
0.26	1.26	2.26	3.26	4.26	5.26	6.26	7.26	8.26	9.26	10.26	11.26	12.26	13.26	14.26	15.26	16.26	17.26	18.26	19.26	20.26	21.26	22.26	23.26	24.26	25.26	26.26	27.26	28.26	29.26	30.26	31.26	32.26	33.26	34.26	35.26	36.26	37.26	38.26	39.26	40.26
0.27	1.27	2.27	3.27	4.27	5.27	6.27	7.27	8.27	9.27	10.27	11.27	12.27	13.27	14.27	15.27	16.27	17.27	18.27	19.27	20.27	21.27	22.27	23.27	24.27	25.27	26.27	27.27	28.27	29.27	30.27	31.27	32.27	33.27	34.27	35.27	36.27	37.27	38.27	39.27	40.27
0.28	1.28	2.28	3.28	4.28	5.28	6.28	7.28	8.28	9.28	10.28	11.28	12.28	13.28	14.28	15.28	16.28	17.28	18.28	19.28	20.28	21.28	22.28	23.28	24.28	25.28	26.28	27.28	28.28	29.28	30.28	31.28	32.28	33.28	34.28	35.28	36.28	37.28	38.28	39.28	40.28
0.29	1.29	2.29	3.29	4.29	5.29	6.29	7.29	8.29	9.29	10.29	11.29	12.29	13.29	14.29	15.29	16.29	17.29	18.29	19.29	20.29	21.29	22.29	23.29	24.29	25.29	26.29	27.29	28.29	29.29	30.29	31.29	32.29	33.29	34.29	35.29	36.29	37.29	38.29	39.29	40.29
0.30	1.30	2.30	3.30	4.30	5.30	6.30	7.30	8.30	9.30	10.30	11.30	12.30	13.30	14.30	15.30	16.30	17.30	18.30	19.30	20.30	21.30	22.30	23.30	24.30	25.30	26.30	27.30	28.30	29.30	30.30	31.30									

Step 2: Getting the image in Google Earth

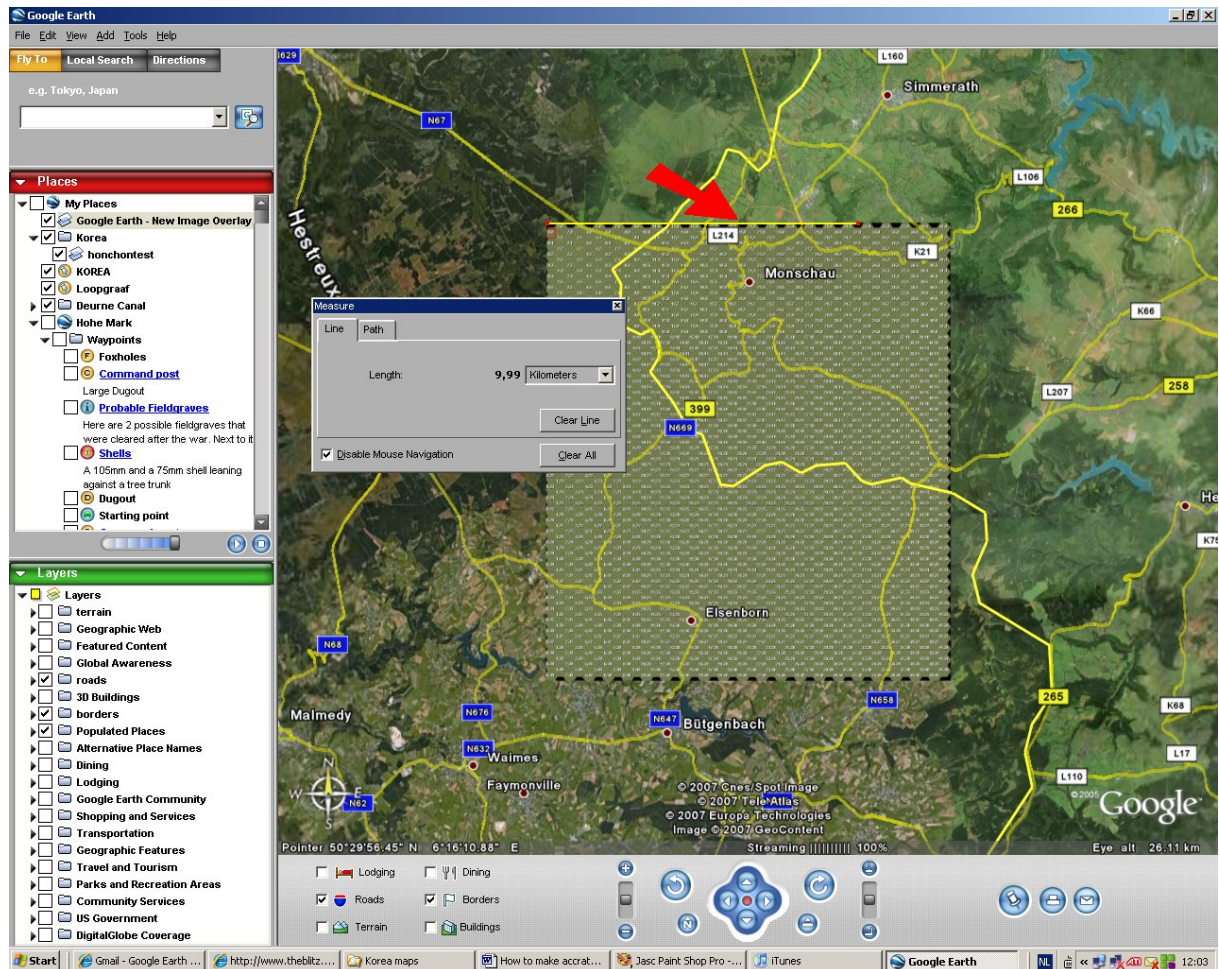
For those who don't have Google Earth. It can be downloaded for free.

We open Google Earth and we find the area we need for our scenario. In this example we travel to the German Eiffel /Ardennes area near the town of Kalterherberg.

Then we choose from the Google Earth menu: *Add*, - *Image overlay* – and browse to the image with the hex numbers. We then get something like this:

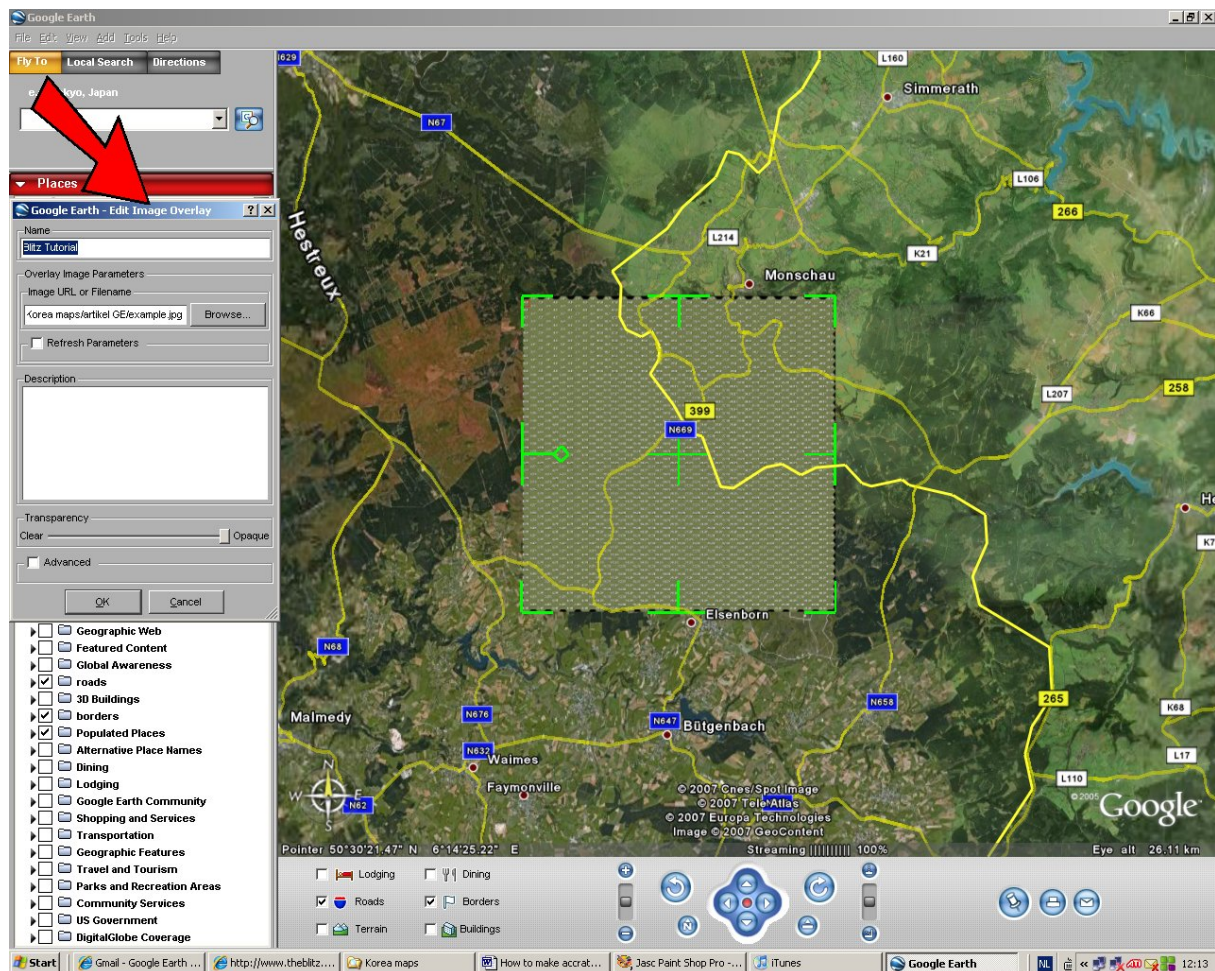


Notice that our image is still not on the right scale. To do this we first press OK to get access to Google Earth's measure tool. In the menu bar go to *Tools*, - *Measure* and select Kilometres to measure with. Along the width of the image I now draw a line of exactly 10 Kilometre. This will give me a reference to which point I need to crop my image.

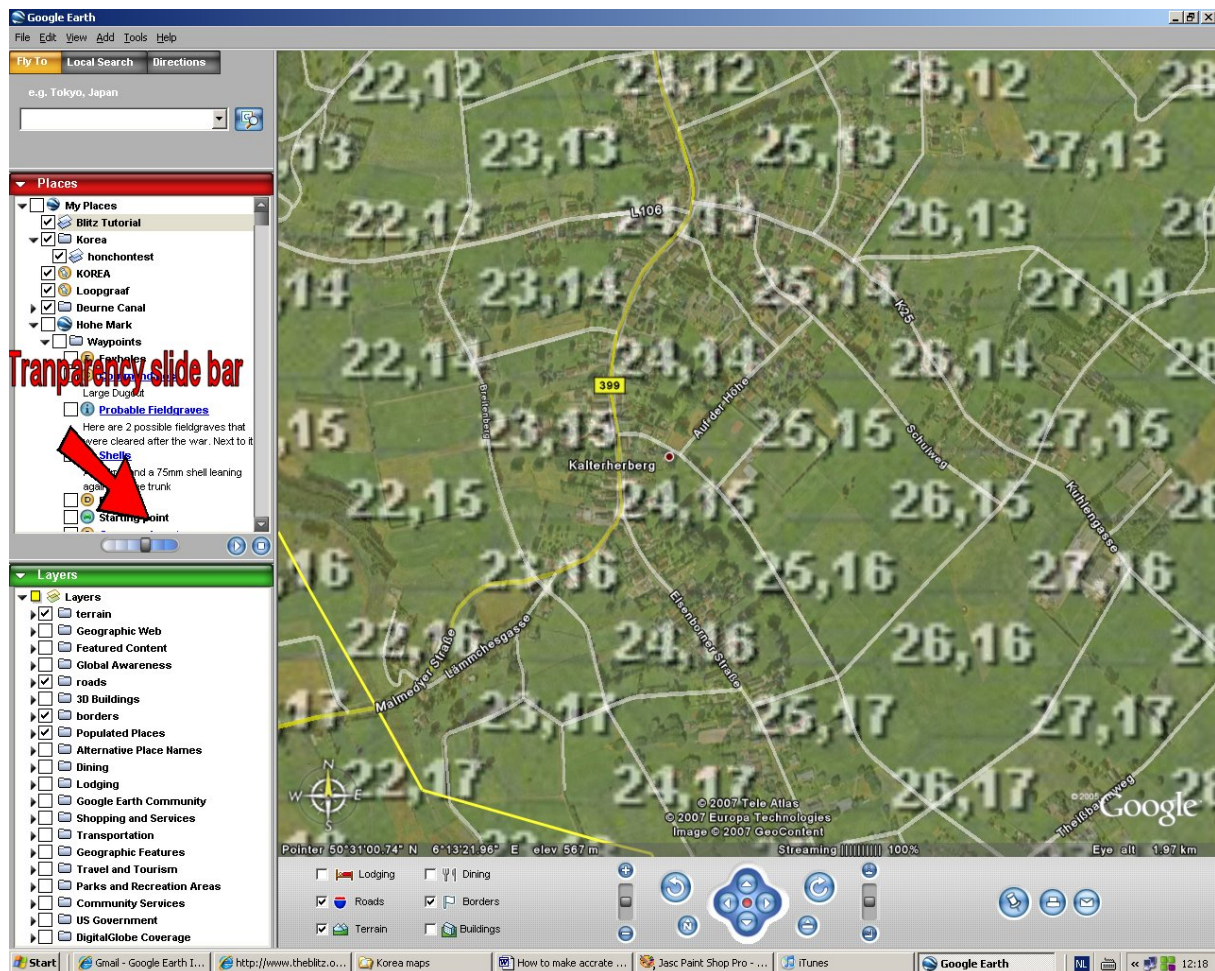


On the left panel I now right click on “Google Earth New image overlay” and choose ‘edit’. This allows me to slide the right side of the image to the left until the width is exactly 10 Km. We will do the same for the length of the image so that it is also cropped to 10 Km. When we’ve done that, our overlay is exactly on scale.

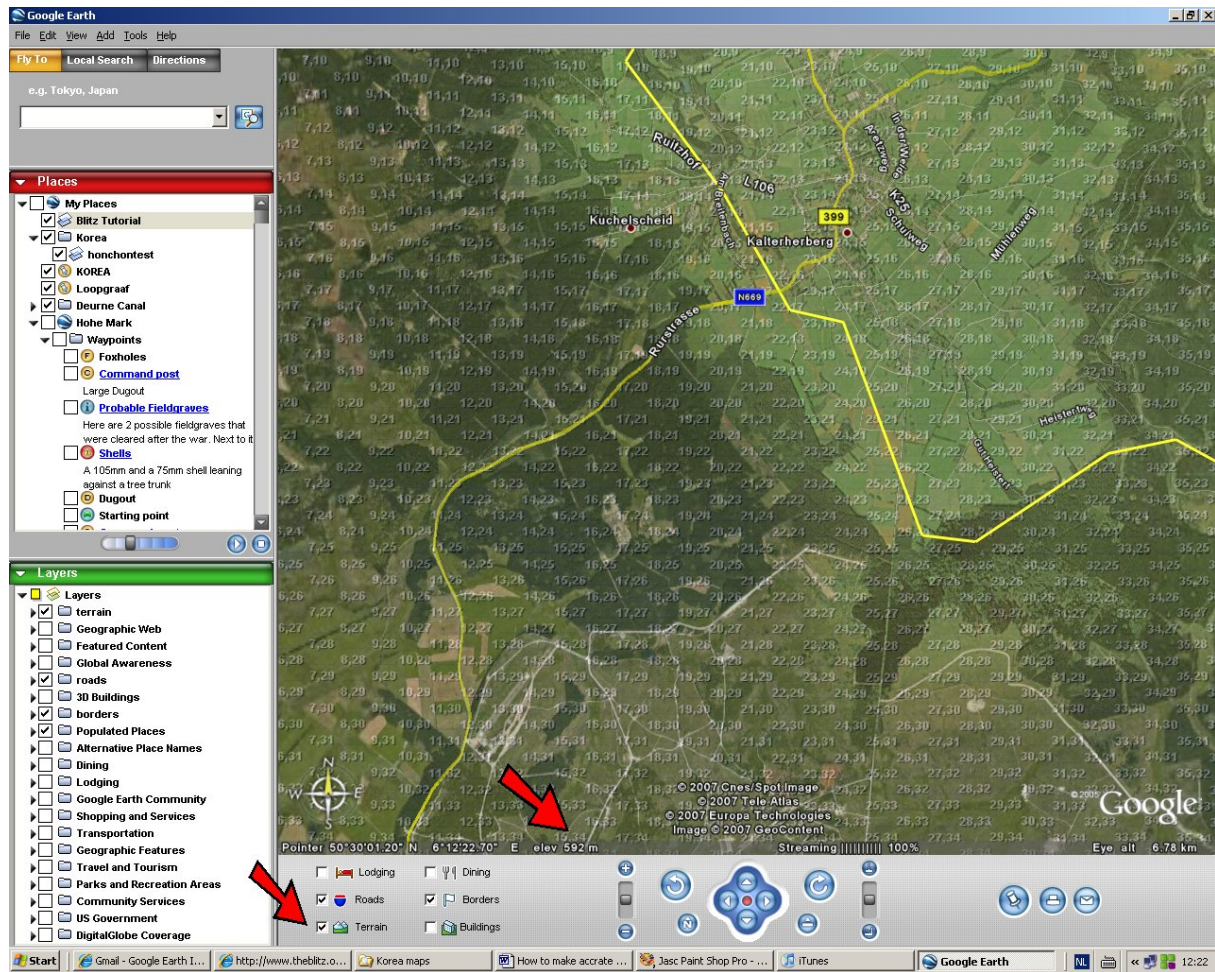
In the edit mode we can place our pointer on the centre of the green cross and move our image exactly where we want to have it for the purpose of our scenario map. Once placed, this is also the right time to save our image on the Left Panel under a name of our choice. I saved it under the name ‘Blitz Tutorial’.



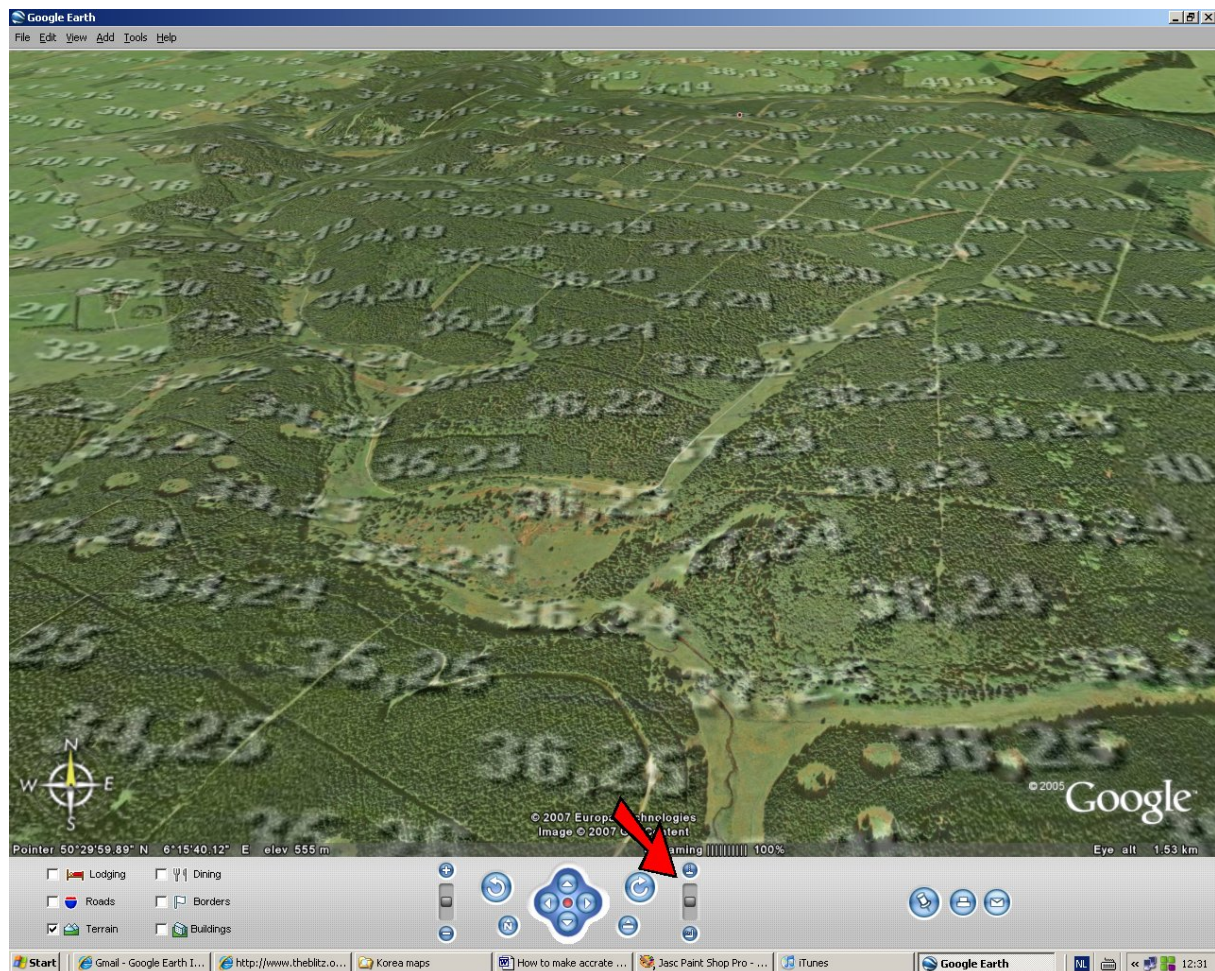
Now everything is ready to be used in our map making. Note the transparency slide bar Google Earth provides. This will allow you to see everything that is underneath each hex.



If you tick on Terrain, moving the pointer over the map will also tell you the height of each hex:



Finally Google Earth is a great tool to play with in '3d mode'. This can give you a good idea how to shape the hills and elevations.



That's all folks... have fun mapping.