

# KML Grid Generator User Notes

Version 1.8

## Intro

This grid generator generates the KML code required for a ground level latitude / longitude grid.

## Instructions

Manually enter cells shaded pale green.

1. Enter the coordinates of the farthest southwest point of the grid and the farthest northeast point.
  - Use decimal degrees.
  - For longitudes west of 0 degrees and latitudes south of the equator, prefix the value with a minus sign.
2. Complete the remaining options.
  - The max number of rows / columns is 100.
  - The colour option has a drop down menu.
3. Copy the generated code from the large code cell.
  - When copying large amounts of generated code (when the number of rows / columns is greater than appx 60 x 60) your computer may take a few moments to complete this step.
4. Select 'My Places' in Google Earth (or a folder in 'My Places') and select Edit > Paste.
5. Google Earth will create a file in 'My Places' (or your chosen file) that contains your grid.

Note: Alternatively, you can paste the generated code straight into a Text Editor and save as a .kml file. However, the code will appear on a single line making it difficult to edit. (The file GE generates in the above method creates formatted code). Some Text Editors limit the number of characters that can appear on a single line, thus limiting the number of rows / columns that can be successfully pasted into the Text Editor.

## Notes

1. The spreadsheet generates a Lat / Long grid, so the cells do not all have the same area. Over a small area that is locally flat the difference is negligible, but it should be borne in mind if measuring the density of features (e.g. buildings per unit area).

2. Grids cannot cross the ante-meridian (180 deg East / West). Two grids should be used if the meridian is to be crossed - one on either side of the meridian.

3. GE generally displays Lat / Longs to 6 decimal places. GE uses more than 6dp, but only displays the first 6. Users can enter the full coordinates, and the generator will use this data. Both GE and Excel distinguish between the 'actual' value used in calculations and the corresponding 'displayed' value, and both work to more than 6 dp.

### **Known Issues**

1. For some starting coordinates and with a large number of rows / columns selected (normally more than 90) , Excel can have difficulty generating valid code. *[Author note: I think this is due to Excel's known floating point issues].*

The workaround is to either

- Select a slightly different starting coordinate
- Reduce the number of rows and / or columns.

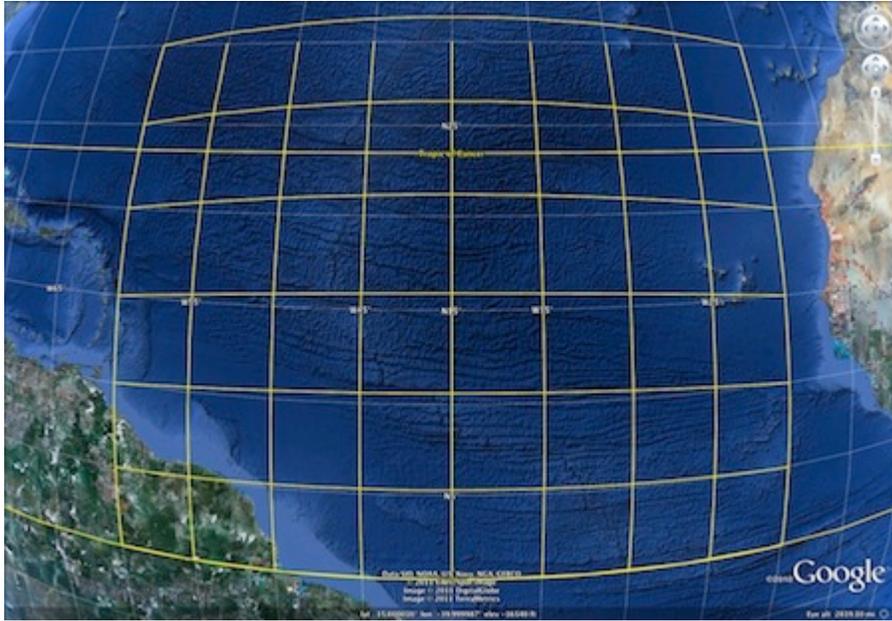
### **Development and Use**

1. Users are free to use, distribute and improve the spreadsheet. Please share your improvements.

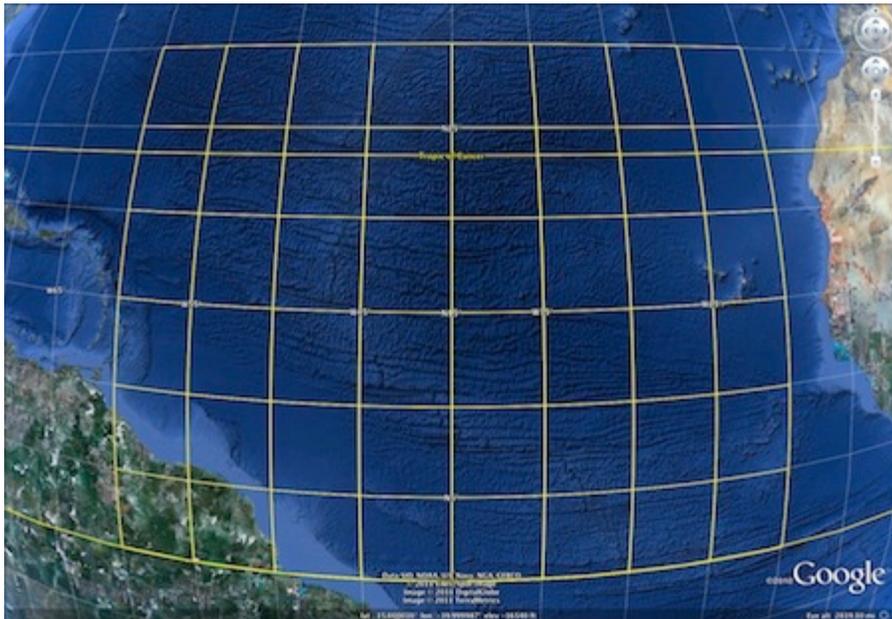
2. If you are improving the code, you should be aware that only

```
<Polygon><LinearRing> ... </LinearRing></Polygon>
```

will generate rhumb lines i.e. east / west grid lines that follow parallels of latitude (see images below). <LinearRing> alone will generate great circles, which is not appropriate for a Lat / Long grid. (See: <http://bit.ly/kml-polygon> ).



This grid was generated with `<LinearRing>` alone.



This grid was generated using `<Polygon><LinearRing> ... </LinearRing></Polygon>`

Author: Will from the UK