

## **COG, Center of Gravity**

This document shortly describes COG, a Center of Gravity programme for BNA files programmed by Jürgen Grieser, FAO/NRC ([agromet@fao.org](mailto:agromet@fao.org)) January, 2007.

### **Purpose:**

COG reads polygons which represent areas on Earth (eg. Boundaries of countries, provinces, districts, etc.) and estimates the area and the center of gravity (centroid) of these polygons.

### **Output:**

For the input file NAME.bna COG produces 3 outputs:  
NAMECentroid.bna contains the centroids for all polygons in NAME.bna,  
NAMEArea.csv contains the area in square kilometers for each polygon in NAME.bna  
and NAMEMap.bmp contains the map of the polygons and centroids as bitmap.

### **Setup:**

COG comes as a zipped file containing the executable COG.exe plus the MS Windows common dialogue as an activeX component, necessary to run it on some configurations.

In order to run COG just extract the zipped file into a directory and run COG.exe.  
Some example BNA files are provided.

### **Constraints:**

The first and the last point of each polygon must be identical!  
The polygons must not be self intersecting!  
The polygons must not have any holes!  
Only one polygon per header line.

### **Warranty and Disclaimer:**

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