Popular science summary
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How good is volunteered geographic information?[1]

Geographic information describes objects in relation to its geographic position on the earth's surface. This information is crucial to be able to solve many problems. Therefore, geographic data are one of the major data sources for the planning and the development of our society. However, geographical data is an expensive data source. It is usually provided by private and governmental organizations. The high costs are a limiting factor for the use of geographical data. Therefore, benefits of geographical analysis and products can only be used by selective companies and costumers.

During the last 10 years a new type of geographic information has become available, the so called Volunteered Geographic Information (VGI). VGI is geographic data which is collected voluntarily from a large number of private individuals. One of the most well known examples of VGI is the OpenStreetMap (OSM) project. OSM collects geographic data of all kind of features from the whole world. In contrast to traditional geographic data OSM data can be used by anyone and is free of charge. OSM provides the possibly to exploit the benefits of geographical data without expensive license costs.

Quality and information are two closely linked terms. If the quality of information is poor the information can become useless or even harmful. For OSM data exist no standard quality control which reduces the usage of this data source. Therefore is it necessary to assess the quality of OSM in order to decide if the free OSM data can replace expensive traditional geographic data.

This study investigates the quality of the OSM road network for the surrounding area of Göteborg, Sweden. Different quality elements are calculated in comparison to another dataset with a known high quality. To be able to calculate the quality elements, first an automatic routine is developed which identifies corresponding features in the two datasets, called matching.

The matching routine produced good results. The quality assessment revealed that in 25% OSM roads have no name. In general it can be stated that OSM is a proper data source, especially in urban areas.

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[1]original title: *Development of an automated matching algorithm to assess the quality of OpenStreetMap road network - A case study in Göteborg, Sweden*