



## ABSTRACT

# Disaggregation Methods for Georeferencing Inhabitants with Unknown Place of Residence: the Case Study of Population Census 2011 in the Czech Republic

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According to Population and Housing Census 2011 the total number of usually resident population in the Czech Republic amounts to 10 436 560 persons. During the process of census data processing an overwhelming majority of population data was georeferenced to building points due to high quality of field works. The final georeferenced results are stored in the Register of Census Districts and Buildings managed by the Czech Statistical Office.

Thanks to high coverage of georeferenced data (more than 99 %), an aggregation method for producing population grid can be applied. However, there are about 93 thousands of people (i.e. about 0,9 % of the total census population), who can be linked down only to the level of statistical districts, but not to the exact place of usual residence (e.g. homeless people, people living in buildings without final approval or in emergency buildings or shelters). That means, distribution of these persons into the exact place (with x,y coordinates) or alternatively into grids must be conducted through some disaggregation method.

This contribution therefore shows different methods on how to disperse not assigned people either into fictive places of usual residence, or into grids. The methods are applied via ArcGIS software on spatial example of a small town Abertamy in the northern part of Czech Republic very close to Germany.

The first method is based on creating new random building points in the relevant statistical districts with respect to existing distribution of inhabited addresses. The second method is based on creating of population centers of gravity (mean, median) for people georeferenced to building points within each concerned statistical district. The last method multiplies relative population weight of each inhabited grid within relevant statistical district with its number of not assigned persons.



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The presentation discusses these methods and indicates their advantages and disadvantages. The final solution for the Czech Republic will be adopted before publishing census results in grid format.