

The creation of a point-spatial layer for the geocoding of street-based databases

The NSO of Malta has been longing for a stable and interoperable solution to geocode its numerous databases. With the use and spatial manipulation of the utilities point data layer and street network shapefiles, the NSO managed to create a point-layer showing a true and realistic representation of buildings while bare land (no residence/building) is eliminated. For the utmost application of such layer, each point attribute was standardised through the Common DataBase (CDB). This facilitated the joining of the spatial layer with street-based databases, acting as a common denominator for both. Given that in most instances, street-based databases lack standardisation, the latter is achieved by primarily running a tailor-made R program and eventually carrying out manual matching of the remaining unmatched streets. Once standardisation is completed, the assigning of point data (xy coordinates) to street-based databases is done through R software, by randomly assigning coordinates in an equal proportion through the CDB street code. The geocoding of all street-based databases will ultimately be displayed on statistical grids of either 500m² or 1km².

The layer, named as the Realistic Building Defined Street (ReBuDS) layer has already been utilised for various geocoding tasks. These include the geocoding of the 2021 Population and Housing Census and other in-house databases and surveys. Such development unlocked new insights in analysing socio-economic and environmental scenarios through which ReBuDS was the ultimate solution. It is anticipated that the ReBuDS layer will play a key role in future projects, where its practicality and functionality will be exploited.

Keywords: geocoding, ReBuDS, street-based databases