

GENERALIZATION OF 1:10,000 BUILDING LANDUSE AND CONTOUR DATA FOR THE PRODUCTION OF 1:50,000 DATA

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The feature generalization makes the data less detailed and less complex for better analysis and representation at reduced scales. The Survey Department of Sri Lanka uses conventional methods such as plates and manuscripts to produce 1:50,000 (50k) hard copy maps. Therefore this automated method of generalization models can be used as a pilot project to produce building, landuse and contour layers of 50k maps.

The Survey Department of Sri Lanka has stored their captured digital data in many ways such as ArcInfo coverages and shapefiles (.shp), AutoCad drawing (.dwg) and data exchange formats (.dxf) Micro Station design format (.dgn) etc. At present TDB (Topographic Data Base in .mdb) format is used to store data. The GIS (Geographic Information Systems) branch was started in year 2000 and took part in providing digital data to the nation.

The main objective was to produce generalized 50k topographical map to fulfill the requirement of user to an accuracy of at least 50% - 75% .

The data related to the study area were extracted by the 1:10,000 (10k) geodatabase covering the extent of the sheet number 41, by clipping using ArcMap 10.1. The Geodatabase was acquired from the available data stored in the GIS branch of the Survey Department of Sri Lanka. Data processing was done using the ArcGIS tools and Python scripts. Three models were built by the author to generalize building, landuse and contour layers respectively.

The generalized 1:10,000 (10k) data set resulting in three 50k data sets of generalized building points with transport line and hydro polygons, generalized landuse polygons and generalized contour lines. The selected study area was moderately suitable for the said generalization data layers.

To achieve the generalized product three models were created with the help of available ArcGIS tools and operators having a reasonable accuracy. It can be identified that the research results of this project can also be changed by substituting different values to model parameters according to user needs. The generalization product can achieve high suitability of accuracy, in a less period of time with more conveniently.