APPLICATION OF AGGREGATION GRAPH'S MODELS OF SPACE TO MULTISCALE DATA BASE

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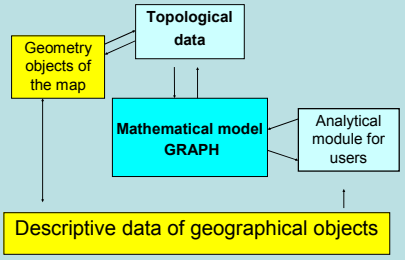
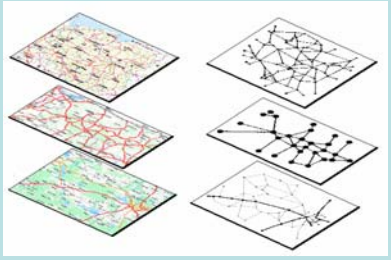
SPATIAL DATA MAY BE DESCRIBED BY MATHEMATICAL MODEL - GRAPH

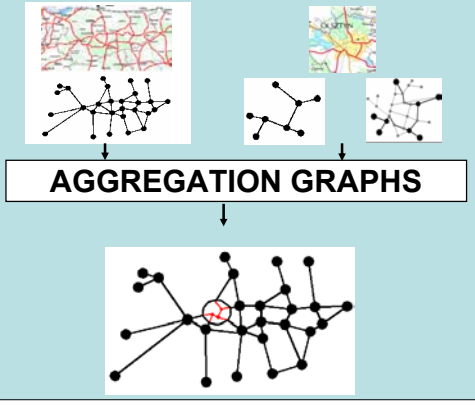


GIS provides tools for transforming a digital map into a topological model. Such a transformation is conducted automatically, under the supervision of the operator, and the results are recorded in databases as topological data. A set of topological data (TC_Complex) may be treated as a model of selected spatial elements. This model provides a basis for developing a mathematical model that can be used for spatial analysis

MULTISCALE DATA OF ROADS



The quality of spatial analysis depends on the accuracy of geographical data representation on maps. Naturally, models based on large-scale maps enable the most detailed and accurate description of geographical space, thus providing the most reliable results of spatial analysis. Models generated from topographic (small-scale) maps comprise larger areas, but are simplified, so the results of analysis based upon them are less reliable.



The paper presents an original solution involving the aggregation of mathematic models that represent the same geographical space at various scales. This offers the possibility to conduct spatial analysis based on small-scale maps, using data provided by large-scale maps.
The models will be able to be connected if identifications of nodes are in order.