3D Generalization of Boundary Representation (B–Rep) of Buildings

Siddique Ullah Baig and Behnam Alizadehashrafi (Malaysia)

Key words: Cartography; Geoinformation/GI;

SUMMARY

Different organizations, users or applications demand different levels-of-detail (LoDs) of generalized buildings. Enhancement of relevant information and suppression of irrelevant information based on the applications or the user's demand is still subject to the research. Therefore, the size and shape of generalized models varies due to differences and incompatibility of data sets (models); generalization operators and rules. This shows that outcome of generalization strategies can be influenced by the type of input data model, generalization process (operation) and the intended LoD. Characteristics of spatial models and building blocks, based on which certain generalization strategy operate need to be specified. In this paper, generalization of 3D buildings represented as boundaries out of three categories of 3D representation: cell models; Constructive Solid Geometry (CSG); and boundary representations (B-Rep) is carried out. Additionally, characteristics and compatibility of 3D city models with certain generalization strategy, 3D representation and visualization standard for output, types of building models and level-of-details (LoDs) are taken into consideration. Results show that 3D generalization of B-Rep of buildings is simple and straight forward. Furthermore, reduction of data volume based on self-perceptual rules, generalization operators can affect size and shape of generalized objects and neighboring segments.

Paper 6862   1
Siddique Ullah Baig and Behnam Alizadehashrafi (Malaysia)
3D Generalization of Boundary Representation (B–Rep) of Buildings

FIG Congress 2014
Engaging the Challenges – Enhancing the Relevance
Kuala Lumpur, Malaysia 16-21 June 2014