
The Configuration and Implementation of a Hybrid 3-D GIS for Urban Data Management

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Abstract

With the development of modern cities, 3-D spatial information systems (SIS) are increasingly required for spatial planning, communication systems and other applications. The geometric information to be used in a spatial information system usually includes two types: vector data (such as buildings, traffic ways, waterways, trees, DTM, etc.) and raster data (such as orthophotos, original images from aerial or still video cameras, etc.). Considering the availability and advantages of relational database technology, it is an important task to develop a data structure which integrates vector and raster data.

In this paper, a self-developed 3-D data structure (V3D) is presented, in which the geometrical, topological, texture and thematic information is defined. Also, the configuration and implementation in a relational database will be investigated and we will report about a prototype system, the CyberCity Spatial Information System (CC-SIS).
