

The study on the Technique of the 3D GIS Modeling

Based on ArcGIS and Google Sketchup

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Abstract: With the rapid development of applications in 3D GIS, the defects in 2D GIS, which is no intuitive feelings, no convenient to manage the space object and no certainty to express the information and so on are more obvious. 3D GIS can recover geographical environment. Every point in 3D models has their true coordinates, so they can express terrain features in intuitive way and realize the management and analysis of 3D visualization. As the 3D modeling is currently built the structure as a whole independent entity and managed the whole entity-oriented to establish databases, it can not resolve properly the object-oriented classification to achieve the management and analysis of spatial information, limited the function of 3D GIS applications. This paper discusses the object oriented 3D modeling technique to use existing software platform for secondary development. The text includes: the object-oriented concept of 3D modeling; the 3D GIS modeling technology based on ArcGIS and Sketchup software; the Digital Campus examples of 3D modeling over the current Digital Campus space modeling, using the methods of divide entities and management-oriented data modeling to combine the 3D model of the campus and the database management objectives, achieve the 3D model of the campus on the Hanoi University of Mining and Geology and inquiry friendly the accurate information. 3D models of the campus on the Hanoi University of Mining and Geology and inquiry friendly the accurate information.

Keywords: 3D GIS. Modeling, ArcGIS. Google Sketchup