Framework for Malaysian 3D SDI in CityGML

Behnam Alizadehashrafi and Siddique Ullah Baig (Malaysia)

SUMMARY

The term Spatial Data Infrastructure is normally used to describe metadata relevant to the collection of technologies, technical methods and processes, policies and institutional arrangements that facilitate the access to 3D spatial data. This paper describes a framework for 3D geospatial data infrastructure based on OGC Standards in Malaysia. The external code lists based on local culture, vegetation and heritage landmarks were proposed and approved for indexing 3D city objects of Malaysia. These code lists can be used between different governmental agencies as a communication tool and utilized for indexing in the 3D spatial database. There are some predefined code lists from other countries such as Germany, which can be utilized for Malaysian context. These code lists can be defined for all the street furniture and façade textures in applications e.g city planning, built environment, disaster management etc. The code lists can also be used for the objects on the façade in different layers such as windows, doors and backgrounds to enhance the usage of 3D SDI for a variety of privileges from end-users to professionals in the near future. The framework for web-based application for connecting to CityServer3D was introduced. CityGML as a standard data model can be utilized for developing Malaysian 3D SDI. In this research deferent methods were applied for converting 3D models to CityGML format. Implicit geometry representation for visualizing uniform shapes such as coconut or palm trees and other street furniture was addressed.

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