

Leveraging 3D Mapping for Planning and Land Management

Abstract

The rapid growth of cities today like Singapore has been largely driven by increasing multiple land use and ever growing complexity of built urban environment. Extensive development has gone deep underground (e.g. rock cavern development) and high above ground. All of which demand accurate 3D map information to support planning, decision making and a sustainable urban land management. With this in mind, Singapore Land Authority (SLA) has spearheaded a whole-of-government (WOG) initiative since early last year to acquire, process and set up a nationwide 3D map information which are in compliant to open source format (CityGML) to ensure data interoperability across platform and technology.

The creation of 3D map will significantly improve planning operations and existing workflows. Visualization and integration of such map with planning data has become possible and these capabilities will enable phenomena assessment and urban planning in 3D such as air quality, noise, floods, building height control, development, underground planning etc. Deploying the accurate 3D map and build upon Geographic Information Systems (GIS), a true 3D representation of cadastral information with its built-up surroundings could be realised. The digital virtual environment will provide a fundamental platform to engage stakeholders in relation to urban land management matters.