3D GIS TAIWAN-AN INTERACTIVE 3D GIS CLOUD SYSTEM

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Abstract

To master the temporal and spatial variation of the land surface environment caused by climate change, it is necessary to make long-term observations of the Earth and record surface images. The nature of Earth observation is a three-dimensional feature. Observational data displayed with 3D stereoscopic effect can help easily master the spatial variation of terrain and the environment. A geographic information navigation system with the human-computer interaction functionality will allow users to swim freely within big data and to dig new information or acquire knowledge. Moreover, through the cloud services it can integrate distributed database and use the remote linked information, as well as provide web browsing for viewing 3D stereoscopic digital contents. The National Applied Research Laboratories has successfully developed the first 3D GIS system, 3D GIS Taiwan, with capabilities of the above features. 3D GIS Taiwan adopts the multiple image resources from Formosat-2 satellite image, airborne image, and in-situ 3D photography, and owns the relevant observation technologies. Therefore, the 3D GIS Taiwan can be sufficient to meet the needs of government officials, professionals, students and the public in accordance with individual needs. 3D GIS Taiwan currently can provide three system services: (1) 3D GIS interactive and stereo navigation system service, (2) interactive and networked 3D GIS system service, and (3) the 3D stereo browsing system service. The services will enable government to enhance the effectiveness of disaster prevention operations, promote the innovative application of spatial information industry, and support the development of Earth science education.