Urban Geo-Informatics

Abstract

Urban Geo-Informatics studies the structure, algorithms, behavior, and interactions of natural and artificial systems in the urban context aiming at improving the living standards of mankind. Urban Geo-Informatics is an interdisciplinary field of science and technology which integrates geographic information science, satellite positioning, remote sensing, urban related sciences and computing science.

Currently, urban is facing to huge challenges, including housing, spatial infrastructure and environment which are evident in metropolitan cities like Hong Kong. Incorporating modern spatial information science and technology is one of the key solutions to urban problems, and Urban Geo-Informatics is one of the most important emerging and evolving research topic with significant importance to Hong Kong and other megacities elsewhere.

Scientifically, three grand challenges have been identified for Urban Geo-Informatics, namely: a) spatial discovery and prediction, b) principles of dynamic spatial information extraction, and c) three-dimensional spatial data infrastructure for smart city.

Hong Kong has the great potential to be an international leading innovation center in Urban Geo-informatics, by a) synthesizing existing research strengths related to urban geo-informatics, including GIScience in PolyU and CUHK, remote sensing and satellite positioning in PolyU, urban planning in HKU, urban policy and geography in CUHK, urban and regional studies in HKBU; b) well using the excellent city laboratory, the city of Hong Kong; c) being in line with the local government strategic direction, i.e. smart city; and d) actively collaborating not only among local universities but also international.

With the innovative research in Urban Geo-Informatics, Hong Kong can be benefited by introducing the related high-tech industries, including satellite image recognition, satellite positioning and geographic information technology. Finally, the living standards of the people in Hong Kong will be highly improved.