

3D Property Descriptions in Urban Environment in China with Standard

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SUMMARY

Population increment in urban environment promotes the 3D development and utilization of urban space. 3D spatial resource and 3D property are defined and managed by National Resource Ministry of China, and new challenges and opportunities come to fore. All natural resources related to the earth surface, including land, forest, water/sea, geology, rural land, lake, grass are involved and should be integrated in management system with legal permit. With the demonstration of 3D cadastre system in Shenzhen, we develop the standard draft of 3D property descriptions in urban environment in China to support the new mission of our ministry in our generation. With relationship analysis between the natural resources and the property, the definition and scope of property are given under Chinese legal system. The location and the shape of 3D property unit are first needed in the standard descriptions and spatial relationships of 3D property units will be described in details both in geographic space and in legal aspect. 3D property should have clear location description about the earth surface, and dependency relationship between them are required. Relative ground surface and the relationship with 3D property unit are divided, and neighbourhood property units are mandatory for description. Also with the framework of ISO/TC 211 Geographic Information - Land Administration Domain Model related material (ISO 19152) new Chinese standard draft can be modeled with the implementation. New standard 3D property descriptions in urban environment in China would promote the reforms, innovations and missions of National Resource Ministry of China, to enhance the integration of uniform spatial planning, natural resource right-confirming, natural resource monitoring, natural resource assessment.

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