3D Cadasters

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In this tutorial an overview is given of the international 3D cadastre developments, in part based on the FIG 3D Cadastres 2010-2014 questionnaires 2010-1014 and 2014-2018. In some countries (Scandinavian countries, Australian states and Canadian provinces) the legislation is allowing/ supporting 3D volumetric parcels and these can be submitted for registration. However, these 3D volumetric parcels are not yet stored in the Cadastral database. Perhaps by surprise, but the first operational 3D Cadastral system, including a database and web-based dissemination was reported from Asia: Shenzhen, China (2013). Every country, has to consider where, when, and how to apply 3D Cadastre (FIG Working group 3D Cadastres). It is to be expected that in many different cases society will need 3D; e.g. registration of legal spaces related to buildings/apartments, (underground) constructions, tunnels, infrastructure/utility networks, air-spaces, etc. It important to align the cadastral (legal) objects with the relevant geographic (physical) objects via SDI.

3D cadastral registration is part of whole 3D spatial development life cycle in 3D consisting of many steps of which the order may differs per country: develop and register zoning plans in 3D, register (public law) restrictions in 3D, design new spatial units/objects in 3D, acquire appropriate land/space in 3D, request and provide (after check) permits in 3D, obtain and register financing (mortgage) for future objects in 3D, survey and measure spatial units/objects (after construction) in 3D, submit associated rights (RRRs)/parties and their spatial units in 3D, validate and check submitted data (and register if accepted) in 3D, store and analyze the spatial units in 3D, and disseminate, visualize and use the spatial units in 3D. While considering the whole life cycle of spatial development, it is good to focus on own aspect: 3D parcels in Cadastre registration.