A Multilayer 3D Cadastre: Problems and Solutions

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ABSTRACT

This paper presents results of research dealing with geodetic and cadastral aspects of utilizing space above and below the surface. The research is being conducted at the Geodetic Engineering Division of the Technion - Israel Institute of Technology, as part of the doctoral studies of the first author. The principal objectives of the research are to find a cadastral-geodetic solution for utilizing above and below surface space and for defining the characteristics of the future analytical, three-dimensional and multilayer cadastre that will replace the existing two-dimensional graphical surface cadastre in Israel. The research objectives are being realized by attaining the secondary research objectives: defining the future cadastral reality and developing a multilayer cadastral model; defining guidelines for transition from the surface cadastre to the multilayer cadastre; developing a model for registering property rights in all three spaces; developing models for managing multilayer cadastre information and creating the geodetic-cadastral background for a legal solution of utilizing all land space.

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