ENGINEERING GEOLOGICAL DATABASE – AN OUTLINE OF THE DATA MODEL

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Engineering geological map is each of the maps that display interrelationship between geological environment and the engineering situation, motivated by engineering or environmental problems at any stage of planning, design, construction or maintenance of civil engineering works. Current trends in the development of digital cartography and spatial databases require transformation of engineering geological maps into engineering geological cartographic database which is digital equivalent of an engineering geological map library. Standardisation of the content and structure of database is essential for the efficiency of organisation, storage and utilisation of digital maps. This paper deals with the content of the engineering geological cartographic database. Rock and soil characteristics, including rock/soil material properties and rock/soil mass properties, are defined as minimal, or core requirements that are elementary for derivation of all types of engineering geological maps. Characteristics of geodynamic processes (e.g. landslides, erosion etc.) are encompassed by the defined extensions to the core requirements, because they are common types of objects that need to be considered although they do not occur on all maps. Moreover, some important elements of database structure are indicated. Observed geological objects are distinguished from interpreted what facilitates multiple interpretation of data as well as the uncertainty assessment. The graphical representation of any geological feature is allowed to change in dependence of the purpose, scale and content of the map. Accordingly, digital engineering geological map is the representation of selected, spatially and temporally defined geological objects that are grouped, symbolised and described for a specific purpose of the map.