Utilization of BIM for automation of quantity takeoffs and cost estimation in transport infrastructure construction projects in the Czech Republic

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Abstract. The article deals with problematic parts of automated processing of quantity takeoff (QTO) from data generated in BIM model. It focuses on models of road constructions, and uses volumes and dimensions of excavation work to create an estimate of construction costs. The article uses a case study and explorative methods to discuss possibilities and problems of data transfer from a model to a price system of construction production when such transfer is used for price estimates of construction works. Current QTOs and price tenders are made with 2D documents. This process is becoming obsolete because more modern tools can be used. The BIM phenomenon enables partial automation in processing volumes and dimensions of construction units and matching the data to units in a given price scheme. Therefore price of construction can be estimated and structured without lengthy and often imprecise manual calculations. The use of BIM for QTO is highly dependent on local market budgeting systems, therefore proper push/pull strategy is required. It also requires proper requirements specification, compatible pricing database and software.