

Automated data acquisition to show the actual performance during the construction process

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1 Abstract

In times of workplace digitalization, Building Information Modeling (BIM) is indispensable to the construction industry due to the potential of consistent data tracking and usage. Based on a dynamic working environment as well as specific internal requirements of individual companies, object-oriented planning and processing with BIM-methods still needs adaptation efforts in order to be widely acceptable in the realization phase and on the construction site. Thus, the mapping of actual data on site is deemed the “Achilles’ heel” of successful project control.

This paper presents a concept for automated data acquisition in complex infrastructure construction sites – especially regarding the processes of road construction and earthworks – with emphasis on different innovative digital methods from which actual values regarding the construction progress can be derived and compared to a target model or digital twin. The objective is to avoid subjective misinterpretations, minimize project risks and turn the project into a more responsible enterprise altogether.

Keywords: performance report, project controlling, infrastructure, data acquisition, BIM

2 Introduction

Construction companies are defined by the construction of buildings or structures with a unique character. Like in any other company, liquidity must be given at all times. In order to guarantee this, a detailed performance monitoring within the scope of project controlling is required. Quality performance, scheduling and costs are closely related. The resulting documentation

usually reflects the economic state of the construction project. However, the complexity of the monitoring system correlates with the complexity, size and other specific requirements of construction projects in terms of materials, personnel and location.