

Simulation IDM for Schedule Generation of Slip-Form Operations

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Abstract : Slipforming operation's linearity is a source of planning complications, and operation is usually subjected to bottlenecks at any point, so careful planning is required in order to achieve success. On the other hand, Discrete-event simulation concepts can be applied to simulate and analyze construction operations and to efficiently support construction scheduling. Nevertheless, preparation of input data for construction simulation is very challenging, time-consuming and human prone-error source. Therefore, to enhance the benefits of using DES in construction scheduling, this study proposes an integrated module to establish a framework for automating the generation of time schedules and decision support for Slipform construction projects, particularly through the project feasibility study phase by using data exchange between project data stored in an Intermediate database, DES and Scheduling software. Using the stored information, proposed system creates construction tasks attribute [e.g. activities durations, material quantities and resources amount], then DES uses all the given information to create a proposal for the construction schedule automatically. This research is considered a demonstration of a flexible Slipform project modeling, rapid scenario-based planning and schedule generation approach that may be of interest to both practitioners and researchers.

Keywords : discrete-event simulation, modeling, construction planning, data exchange, scheduling generation, EZstrobe

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