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Converting Scheduling Time into Calendar Date Considering Non-Interruptible Construction Tasks

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Abstract : In this paper we developed a new algorithm to convert the project scheduling time into calendar date in order to handle non-interruptible activities not to be split by non-working days (such as weekend and holidays). In a construction project some activities might require not to be interrupted even on non-working days, or to be finished on the end day of business days. For example, concrete placing work might be required to be completed by the end day of weekdays i.e. Friday, and curing in the weekend. This research provides an algorithm that imposes time constraint for start and finish times of non-interruptible activities. The algorithm converts working days, which is obtained by Critical Path Method (CPM), to calendar date with consideration of the start date of a project. After determining the interruption by non-working days, the start time of a certain activity should be postponed, if there is enough total float value. Otherwise, the duration is shortened by hiring additional resources capacity or/and using overtime work execution. Then, time constraints are imposed to start time and finish time of the activity. The algorithm is developed in Excel Spreadsheet for microcomputer and therefore we can easily get a feasible, calendared construction schedule for such a construction project with some non-interruptible activities.

Keywords : project management, scheduling, critical path method, time constraint, non-interruptible tasks
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