

## **ABSTRACT**

### **RESCHEDULING ANALYSIS OF THE 5-STOREY STRUCTURE OF THE EKA HOSPITAL M.T. PROJECT. HARYONO PROJECT USING BIM 4D BASED PERT METHOD**

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The construction business in Indonesia is growing rapidly. The success of a construction project can be determined based on project success parameters, namely quality, time, and cost as planned. One scheduling method, the Program Evaluation and Review Technique (PERT), is a technique used to plan and control projects by calculating project completion time based on three different time estimates. Currently, construction technology 4.0 is a concept that combines digital technology and automation with modern construction methods and principles. For example, digitalization technology is Building Information Modeling (BIM), which has great potential for providing information quickly. In this study, the application of BIM 4D was conducted through the integration of BIM 3D and project scheduling using the PERT method in Navisworks. The PERT method was applied to structural work on the critical path. The BIM 3D applied was only building modelling for structural work. The results of this study, which compared scheduling simulations between conventional scheduling and the PERT method, showed that with the application of the PERT method, the project would be completed later than planned, with an average duration of 165 days and a 50% probability of timely project completion. If the project aims for a 99% completion probability, it would require approximately 178 days. Meanwhile, if the project continues to use the conventional method, the probability of on-time completion is nearly 0%, meaning the project will not be completed within 150 days. The difference in the duration of the work structure between the conventional scheduling method and the PERT method is  $\pm 15$  days.

**Keywords :** PERT method, Time schedule, BIM 3D, BIM 4D