

## **ABSTRACT**

The development of construction projects in Indonesia is growing rapidly. The World Economic Forum (WEF) in the 2015-2016 Global Competitiveness Report stated that Indonesia is a country ranked 62 out of 140 countries regarding infrastructure development. However, in the course of construction projects, there are often several obstacles that cause delays in project completion so that the project completion time is not in accordance with the previously planned schedule and costs are greater. One of the dominant constraints causing project delays is poor duration and cost estimates, insufficient planning and coordination of resources and lack of quality control. PT ABC is the largest telecommunications service and network provider in Indonesia that provides various communication facilities to meet the needs of the community in the telecommunications sector by providing a variety of services. PT ABC is assisted by its subsidiary named PT XYZ in carrying out a network service deployment project or commonly called FTTH (Fiber To The Home) where FTTH is a fiber optic network withdrawal project for customers. However, in the course of this project, PT XYZ experienced project delays from the project duration that had been estimated. The impact that can result from project delays is that the project completion costs incurred are greater than what was previously planned. PT ABC is assisted by its subsidiary named PT XYZ in carrying out a network service deployment project or commonly called FTTH (Fiber To The Home) where FTTH is a fiber optic network withdrawal project for customers. However, in the course of this project, PT XYZ experienced project delays from the project duration that had been estimated. The impact that can result from project delays is that the project completion costs incurred are greater than what was previously planned. PT ABC is assisted by its subsidiary named PT XYZ in carrying out a network service deployment project or commonly called FTTH (Fiber To The Home) where FTTH is a fiber optic network withdrawal project for customers. However, in the course of this project, PT XYZ experienced project delays from the project duration that had been estimated. The impact that can result from project delays is that the project completion costs incurred are greater than what was previously planned. PT XYZ experienced project delays from the

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Based on the problems previously described, it is necessary to redesign the scheduling baseline with the crashing method. The crashing method is a method used to reduce the duration of completion of an activity in an effort to speed up the duration of the project. The application of the crashing method uses two alternatives, namely the alternative of adding working hours (overtime) and the alternative of adding workers. The design mechanism using this method is carried out by calculating crash duration, crash cost, and cost slope. After that, calculations are made to obtain additional costs which will then be added to the direct costs of the project. Then do the calculation of indirect costs followed by the calculation of total costs.

The result of the redesign of the baseline project schedule Shift To The Front (STTF) Galanggang, Batujajar at PT XYZ by using the crashing method has two alternatives, namely the alternative of adding working hours and the alternative of adding workers. In the alternative of adding working hours, there is an acceleration of 5 days where the project duration is 69 days to 64 from. In addition, the total project cost increased by Rp2.962.018 to Rp451.020.906 from Rp448.058.888. In the alternative of adding labor, it was obtained acceleration for 7 days where the project duration was 69 days to 62 from. In addition, the total project cost increased by Rp747.580 to Rp448.806.468 from Rp448.058.888.

The results of the redesign of the scheduling baseline are expected to provide benefits to related companies as a reference for consideration regarding the timeliness of the implementation of the STTF Galanggang project, Batujajar. In addition, it is also expected to assist the project manager in managing a project, especially regarding the optimal scheduling design so that the project does not experience delays in duration and additional costs.

**Keywords** — *crashing, critical path method, duration, cost, project scheduling*