

ABSTRACT

PT XYZ is a service and production company in the field of telecommunications and information technology (IT). At the end of 2021, PT XYZ undertook a collaborative project, namely a refurbished and repair project for Network Terminal Equipment (NTE). During the implementation of the project in the previous term, PT XYZ often experienced delays in project completion or the number of equipment specified in the contract was not achieved. One of the factors that caused delays was that the project team did not use the project implementation reference documents. So that delays do not occur in the next term, it is necessary to have a project planning document or master plan on the aspects of scope, time, and risk.

The master plan design for the scope, schedule, and risk aspects uses several research methods. For the scope aspect, the method that will be used is Decomposition. This technique will divide the project work into smaller parts (Work Packages). In the schedule aspect, the method used is the Critical Path Method (CPM). This method is used to determine the longest trajectory in project work activities and the required duration. And on the risk aspect, the method used is Qualitative Risk Analysis. This method is used to determine risk categories based on the value of opportunities and impacts on each project risk. In the risk aspect, a sensitivity analysis was carried out using a tornado diagram to determine the risk that had the highest cost impact on the project.

The process of designing this master plan requires several documents as a reference, namely the project charter, activity list, activity sequence, estimate activity date, and risk breakdown structure. Based on the design process that has been carried out, the results obtained are that in the scope aspect there is a project scope statement document that includes general information regarding project implementation, then there is a Work Breakdown Structure (WBS) document and a WBS Dictionary that includes information about the hierarchy of each job and a project job description. In the schedule aspect, the critical path results obtained are 11 critical activities from 16 main activities with the longest duration of 84 days. The results of the critical path calculations are compiled into a scheduling document, which consists of a project network diagram, gantt chart, and milestones list. In the risk aspect, the results obtained are that there are 90 identified risks consisting of 82 negative risks and 8 positive risks. The identification results are then given an assessment based on probability and impact on aspects of quality, cost, scope, schedule, safety and security, and proximity. After the assessment process, it is then mapped into the probability and impact matrix (PIM). Based on the results of the PIM, information was obtained that there were 56 risks in the watchlist risk category and 34 risks in the urgent risk category. Risks that are included in the risk watchlist category will be prepared for a risk response plan containing mitigation information and contingency reserves for each risk. In the risk design, a tornado diagram is designed to determine the sensitivity analysis based on the project cost.

The benefits of this design result can assist the project team in knowing and understanding the general scope and work to be carried out on the project. The results of the design can also assist the project team in monitoring project progress and important dates for each project. In addition, the benefits obtained from the results of this design are that the project team can identify risks that are in the low category and only need to be monitored, and risks that are in the high category and require risk mitigation.

Keywords: Master Plan, Refurbished, Cost, Schedule, Risk.