

## ABSTRACT

PT.Telkomsel as one of cellular operator in Indonesia who has 51,3 million customers which are base on statistics take market share for industry cellular of telecommunication about 51 %. That's why PT. Telkomsel Jakarta specially, has maintenance department for keep availability equipment which use to do telecommunication connection such as BTS in order to its function good. The problem is if number of BTS damaged larger than number of site crew who have to fix them. This is will take queue of repair that will cause unnecessary additional downtime that will have loss of potential revenue even earn to result the loss of consumer belief. Therefore be required an efficient and effective maintenance method in order to keep BTS functions good. In this case availability can improve with determine how many number of site crew in order to occur balancing between number of damaged equipment and number of optimal site crew, so that could keep condition of BTS remain to be good.

Maintenance method which use are Reliability Centered Maintenance (RCM). Qualitative and quantitative analytic are done in maintenance policy. Qualitative analytic is done by using Reliability Centered Maintenance (RCM) to determine a proper preventive maintenance task for each component based on its reliability characteristic. In RCM method, several stage of analysis is done such as system selection and information collection system description, function and functional damage, failure mode and functional damage, logic tree analysis and task selection. Quantitative analytic is done to determine time interval of preventive maintenance. Qualitative analytic in this research is only done for critical arranger component of BTS and the task done is based on qualitative analysis. While for determine the number of optimal site crew by using Life Cycle Cost method.

Result got from qualitative analysis by using RCM method for arranger component for BTS in deciding preventive maintenance policy are 11 *Condition Directed* task, 4 *failure finding*, 1 *Time directed*, and 1 *Run to Failure* components. Whereas, based on qualitative analysis, are determined 6 most critical components, they are *Battery*, *genset*, *TXxx*, *BOIx*, *VXxx*, and *BB2x*. While the result by using LCC method is taken that number of optimal site crew  $M = 5$  and retirement age  $n = 8$  years. From these suggestion are taken that difference outcome between suggestion and existing is Rp. 2,495,556,679.59

Hope these suggestion such as maintenance policy and number of optimal site crew, then PT. Telkomsel consider for decide effectively and efficiently maintenance policy and policy in determine number of optimal site crew in order to not occur loss of revenue too much.

Key words : Maintenance BTS, Availability, RCM, LCC