

## ABSTRACT

*The number of telecommunication user in Indonesia increase during 2009-2013 period. In 2013 noted about 300 million customers of cellular services and higher than Indonesia society which approximately 243,6 million. PT Telkomsel Indonesia is one of cellular providers company which has 131,5 million customers or about 49% in market share. One of the most important infrastructures to support operational activities of cellular operator is BTS (Base Transceiver Station). If failure functions of BTS occur, it will affect loss of potential revenue and customer satisfaction. Operate BTS in long period can increase hazard rate and aging of BTS. Therefore it is necessary to determine optimum retirement age of BTS. While BTS failure, therefore it is maintain by maintenance site crew. If the number of maintenance site crew increase, it will affect to increase maintenance cost, but if the number is few will affect to increasing shortage cost. Therefore it is also necessary to determine the number of optimum maintenance site crew.*

*Methods which will be used for optimization is the life cycle cost method. Life cycle cost method combining retirement age and the number of maintenance site crew to achieve minimum life cycle cost.*

*Plotting the distribution and determination of the distribution calculate based on data TTF and TTR. Then, Calculation of sustaining cost and acquisition cost obtain to achieve minimum life cycle cost. Based on life cycle cost calculation, the smallest total LCC is Rp54,467,056,568.00 with the optimum retirement age is 5 years and the optimum number of maintenance site crew is 5.*

*Keywords : Optimization, Maintenance Management, Life Cycle Cost*