

ABSTRACT

Communication is one activity that can not be separated from human life. Currently, communication increasingly supported by various technological inventions. The growth of technology also have an impact on the use of the technology itself, in this case is the mobile telecommunications subscribers. Indonesian Cellular Telecommunications Association (ATSI) noted, until the end of 2011, the number of cellular subscribers to reach 250 million subscribers. Growth of customers is of course also have to be balanced with the development of infrastructure in order to meet customer needs and provide the best service. In the world of telecommunications, infrastructure development in order to meet customer needs is to increase the number of Base Transceiver Station (BTS).

One way to minimize the losses is to improve Reliability, Availability and Maintainability (RAM) from the BTS and Cost of Unreliability (COUR) to determine how much cost is generated by the RAM problem. By using the data in the form of MTTF, MTTR and MDT from the units, conducted modeling using Blocksim 9 to find out the value of RAM from the system that is useful for assessing the performance of system.

From the results of the data processing using RAM Analysis using reliability block diagram (RBD) modeling based on analytical approach, at the time the 72 hours, System reliability value (13.22). With lagging Availability Inherent value of 98.32% during 8760 hours already fulfill inherent factors leading availability (97.67%) on the system. Based on the evaluations that have been done using the world class maintenance key performance indicator (KPI), a leading indicator of availability has reached the target of a given indicator. The Average value of Maintainability system at the time $t = 12$ hours is 96.3%. As well as using the calculation Cost of Unreliability, obtained as a result of a Unreliability Cost \$2,340,421.98 based on active repair time, and \$2,380,687.64 based on downtime.

Keyword: Reliability, Availabilty, Maintainability, Key Performance Indicator, Cost of Unreliability, Reliability Block Diagram