

ABSTRACT

Dense wavelength division multiplexing (DWDM) is a multiplexing technology using several wavelengths transmitted on the single optical fiber, so information can be transmitted simultaneously. DWDM technology can increase the traffic capacity without the addition of optical cable. However, bending and fiber-cut effects affect the DWDM system. So, the objective of this research is to analyze network performance on the Irb north of Sumatra. Then the calculation includes attenuation, power link budget, availability and troubles to be analyzed. Observation uses real and trouble data on October, November, and December 2018. On the power link budget using sensitivity value is -30 dBm and safety margin is 6 dB. On the calculation received power result better value and margin value can assist power transmission on every link. The result shows that availability value has not reached maximal 99,999% with range value is 98.1971 % to 98,54009 %. Observation of trouble during three months were 21 troubles dominated by fiber-cut.

Keywords : DWDM, attenuation, power link budget, availability, fiber-cut