ABSTRACT

Optical fiber is widely used as a transmission medium for capacity and speed that better than copper. Although it has many advantages, the use of optical fibers for communication systems was not unimpeded. It certainly will result in failure of communication and loss of quality of service.

This thesis explores the analysis of failure of the fiber optic network technology that uses Dense Wavelength Division Multiplexing (DWDM) to increase the value availaibiity the study area ring-1 which is in the Witel Jabar Tengah PT. Telekomunikasi Indonesia Tbk. The area was chosen because the frequency of failure is high. The study began by determining the area of research, namely Witel Jabar Tengah. Furthermore, collected data of specified network configuration and centralized research in ring-1 Witel Jabar Tengah. Then collected the data failure in these areas. Once the data is acquired, the data is processed to determine where the link is broken. The next stage is to do an analysis based on predetermined parameters, namely availability. The last stage is the analysis of the cause and solution if the availability is below the prescribed standards by PT Telkom.

From the results of the evaluation in the period January 2014-March 2016, the most dominant failure caused by a third party. Most impaired link is Subang-Patrol. Availability value an average of 99.51%, which is still below standard. This happens because of the long time of repair. Displacement core is one way to suppress the repair time.

Keyword : evaluation, DWDM, disturbance, fiber optic, availability