

## ABSTRACT

Metro Ethernet is a technology that is applied today in fulfillment of the demand for telecommunications network to bring together a number of companies / institutions that are geographically separated. A network of fast and reliable access is something that must be fulfilled so as not to disappoint users of the network. In the operation of the network (Metro Ethernet) many things to consider, especially in terms of technology used as the transport side. RPR is a technology that is expected to as a solution.

However, various kinds of disturbances in the network also becomes a problem in the delivery of data, such as failure due to breakdown link. Therefore, it needs a protection to handle the failure of a network. In this case, RPR technology has a protection system that is wrapping that can handle the failures.

In terms of packet loss, network-based Metro Ethernet RPR with protective wrapping of good quality. Where the value of the highest packet loss generated amounted to 0.406% for scenario I, scenario II 4,237% and 5,321% for scenario III. Value of packet loss is still quite good because it is still in ITU-T standard for packet loss tolerated up to 20%. In terms of recovery time, also showed good results. Where the value of the average recovery time for scenario I, 38.064 ms to 0.491 ms and data traffic for VoIP traffic. While the scenario II, 41.89 ms for data traffic and 3.862 ms for VoIP traffic and for scenario III, 41.3 ms for data traffic and 3.4 ms for VoIP traffic. This is because the RPR protection that can protect the damage (link failure) <50 ms. For the service disruption time, also showed good results. Where the value of the service disruption time obtained for the scenario I average is 62,14 ms for data traffic and 19,9 ms for VoIP traffic. For scenario II, the service disruption time values obtained by an average of 62,72 ms to 19,92 ms and data traffic for VoIP traffic and for scenario III, 62 ms for data traffic and 19,9 ms for VoIP traffic. Value of service disruption time (delay) is quite good because it is still in standard ITU-T for the delay of 0-150 ms.

**Keywords:** Metro Ethernet, RPR (Resilient Packet Ring), protection.