

## ABSTRACT

The rapid of data traffic improvement and the trend makes a limited capacity of existing transport system bandwidth, which dominated by the existing and present transportation system. To design and implement optimally in distributing voice traffic with switch circuit network. With this concept, it will happen when trouble in installation a new service provisioning based on data, because the existing network is only optimally for circuit switch and unscalable for data traffic. Because of that, the technology development and research work with the main purpose to fulfill the transport need based on packet in metro area, which include: data and voice service delivery, scalable and full capacity, data service provisioning ability, reliable and secure. The technology is Metro Ethernet and RPR,

In this final project analysed Metro Ethernet network dan Resilient Packet Rings (RPR), which the Metro ethernet technology used standard IEEE 802.3, IEEE 802.1 ag and IEEE 802.ah, sedangkan RPR technology used IEEE 802.17 standard to deliver the packet. To implementing some data transmit scenarios, in order to find the best technology performances. The metric of network performances is Quality of Services, which including delay, packet loss dan throughput.

Analysis Result by using programming delphi, got delay for data application use proteksi, for ME is = 0.01414  $\mu$ s and for RPR is 0.007665  $\mu$ s. Untuk voice application Dengan proteksi, for ME is 0.011704  $\mu$ s and RPR is 0.130734  $\mu$ s. Package loss for good data application with proteksi and without proteksi is 0%, Whereas for voice application with proteksi got, for ME is 63.89% and RPR is 66.66%. Throughput for data application with proteksi, throughput for ME is 19.62175 Mbpses and RPR are 26.4715 Mbpses. For voice application with proteksi for ME is 0.305 Mbpses and RPR are 0.257. So RPR network have better Performansi are compared to Metro Ethernet network