

## **ABSTRACT**

Ethernet over SDH is an advance development project of technology SDH which has been mostly applied lately as multiple hierarchies that base on synchrony transmission. Ethernet over SDH has assisted to develop SDH network in order to be high efficiency data networking. For each provider of telecommunication has been trying to provide best service to their customers. However, in providing their best service, the providers face some barriers, such as high cost of operational (required equipment is very expensive) that still has to be charged by its provider.

By using traditional network of Synchronous Digital Hierarchy (SDH) where between CPE (Customer Premises Equipment) and router still applies SDH, this kind of system has some barriers such as high cost of equipment, poor scalability, inflexible when increasing bandwidth towards customers.

Transport networking in metropolitan, Ethernet technology is a challenge in distributing of data package. Ethernet networking offers providing cost, cheaper maintenance and provides better data service compared with existing networking such as SDH. Increasing requirement towards services base on data becomes one of motivator Ethernet development. Nevertheless, it does mean SDH will end its sustainability; to answer the competition has been developed new technology base on SDH which is called Next Generation of SDH, where it provides Ethernet services on SDH networking.

To provide best solution towards those complications, then planning implementation of network that base on Ethernet over SDH will be conducted in a region through provider of telecommunication. By creating one planning of network base on Ethernet, it is expected to be best solution in the future as a more efficient backbone of network in distributing data packaging.