

## ABSTRACT

The Improvement of bandwidth need as the effect of rapid traffic growth like internet, intranet and multimedia application has made an increase in the needs of technology transportation. The Innovation is grew up until Dense Wavelength Division Multiplexing (DWDM) technology invited, this technology has large capacity and good standard. But the large capacity also be followed with risk lost information large too when the failure happen. This problem of course not wish by the operator. Therefore the network transmission performance must be increased with use protection system that will be safe the information when the failure happen with change the active traffic into backup design.

Nowadays, transmission communication optical fiber system DWDM Java Backbone has been working since the end of 2005 has three ring protection that are Ring-1, the area are Cikupa-Semanggi2-Semarang-Solo-Bandung-Semanggi2-Cikupa, Ring-2 the area are Semarang-Surabaya-Jember-Solo-Semarang and Large Ring that transmission cover Ring-1 and Ring-2. Self Healing Ring system SKSO DWDM Java Backbone use MS-SPRing for each where there aren't interchange protection between Ring-1 and Ring-2. It caused perpu if there are cut of cable more than one point on the difference joint and ring. Therefore, new alternative route is needed so that perpu will be not happen, although there are cut of cable on the difference ring and joint.

In this Final Assignment will be done reconfiguration SKSO DWDM Java Backbone with build up new alternative route, so will be wished there aren't perpu if there are cut of cable more than one point. The design includes *power link budget*, *rise time budget* calculation and DWDM characteristic. It is hoped that the needs of an efficient route with high quality and performance can be achieved