ABSTRAK

Sejak diperkenalkan pada awal tahun 1990, SDH (*Synchronous Digital Hierarchy*) sangat membantu dalam segi peningkatan kemampuan, efektivitas biaya dan reabilitas dari jaringan telekomunikasi terutama serat optik. Dalam perancangan dan pembuatan sistem transmisi SDH, haruslah memperhitungkan kemungkinan buruk, yaitu kegagalan sistem transmisi tersebut. Karena itu diperlukan pengetahuan yang baik tentang sistem proteksi SDH agar tetap terjaga. Proteksi dilaksanakan dengan membuat jaringan transmisi lain sebagai cadangan (*back up*) apabila jaringan transmisi yang utama gagal berfungsi.

Sistem proteksi SDH mempunyai berbagai macam sistem proteksi dimana penggunanya disesuaikan dengan kebutuhan trafik, topologi jaringan, maupun faktor pertimbangan ekonomis antara lain MSP (*Multiplex Section Protection*), SNCP (*Sub Network Connection Protection*) dan MS-SPRing (*Multiplex Section-Share Protection*). Namun yang digunakan oleh perangkat telekomunikasi di PT.Excelcomindo Pratama adalah jenis MS-SPRing, semua itu dikarenakan mengingat keunggulannya dibandingkan dengan MSP dan SNCP.

ABSTRACT

Synchronous Digital Hierarchy (SDH) has been supporting an important role to improve the affectivity cost and the reliability of telecommunication network especially optical fiber since an early of 1990. However, the process of designing and constructing SDH transmission system is not merely a simple process, some failures on the system possibly occurs. Thus, to minimize the worst effect or to stabilize the SDH network in balance, mastering the knowledge of SDH protection system is essentially needed. In the sense that SDH protection system involves the making of alternative transmission network as a (*back up)* whenever the main transmission network fails.

SDH transmission system consist of a various kinds of protection systems that the usage of those systems is based on some factors such as the need of traffic, network topology, and economical consideration, such as MSP *(Multiplex Section Protection)*, SNCP *(Sub Network Connection Protection)* and MS-SPRing (*Multiplex Section-Share Protection).* PT. Excelcomindo Pratama using MS-SPRing, based on its superior compared with another MSP and SNCP.