School of Electrical and Electronic Engineering

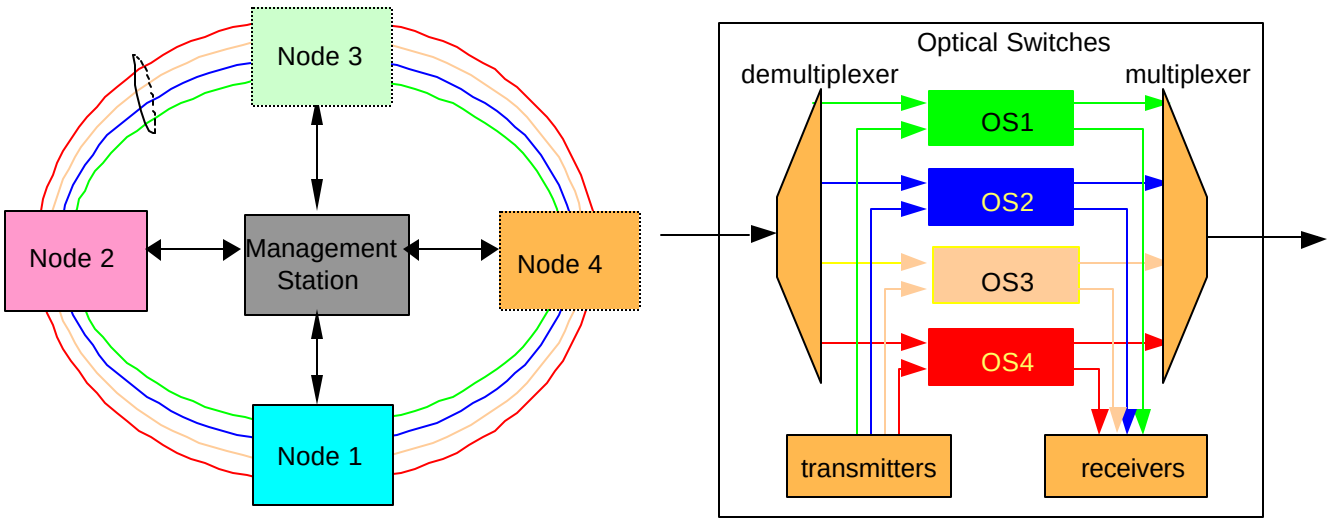
Network Technology Research Centre

WAVELENGTH DIVISION MULTIPLEXING DEVICES AND TESTBED

Wavelength division multiplexing has received much attention in recent years. It uses light of different wavelengths for information transmission over a single fibre. This increases the transmission capacity greatly and at the same time enables a more flexible design of the future telecommunication and computer networks.

A project to construct a WDM test bed to carry out research in the area was initiated by the NTRC and was supported by the telecommunication Authority of Singapore(now IDA) and NTU. The objectives were to study the design and management of a metropolitan area WDM network and to research into some key components for the system. The project started in June 1999 and some of the preliminary results have been obtained. Part of the test bed and some of the key components designed by the project team are demonstrated here.

The test bed will consist of four nodes and four wavelengths, which may be expanded to more wavelengths and nodes in the future. Two completed nodes with reconfigurable add/drop multiplexers are demonstrated here. The management station enables the performance monitoring and the reconfiguration of the logical connection of the network. In addition to the test bed, some of the key components are displayed. These include Er/Yb fibre DFB and DBR lasers, spectrum sliced light sources and gain equalized erbium doped fibre amplifier (EDFA).



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