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APPROVAL AND DECLARATION

This project report titled Development of Spectral Slicing WDM (Wavelength Division Multiplexing) System was prepared and submitted by Nur Syazwani bt Mohamad Radzi (031080724) and has been found satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the Bachelor of Engineering (Computer & Communication Engineering) in Universiti Malaysia Perlis (UniMAP).

Checked and Approved by

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(ASSOC. PROF. DR. SYED ALWEE ALJUNID)
Project Supervisor

School of Computer & Communication Engineering
Universiti Malaysia Perlis

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‘POTONGAN SPEKTRUM SISTEM MULTIPLEKSAN BAHAGIAN JALUR LEBAR’

ABSTRAK

Pemultipleksan adalah satu cara penghantaran data dari satu atau pelbagai sumber kepada destinasi dengan menggunakan medium penghantaran yang sama. Walaupun ianya menggunakan kaedah yang serupa tetapi dari segi masa dan jalur lebarnya adalah berbeza. Medium penghantaran yang digunakan seperti kabel elektrik, gentian optik dan sistem mikrogelombang satelit. Pemultipleksan boleh dibahagikan pada masa, ruang, frekuensi dan jalur lebar. Tiga kaedah pemultipleksan yang utama ialah Multipleksan Bahagian masa (TDM), Multipleksan Bahagian Frekuensi (FDM), dan terbaru adalah Multipleksan Bahagian Jalur Lebar (WDM). WDM adalah satu teknik di mana banyak isyarat dihantar melalui satu medium pada masa yang sama. Teknik ini menggunakan jalur lebar yang berlainan pada setiap penghantaran isyarat. Ia melibatkan penggunaan gentian optik dengan satu mod atau pelbagai mod.

SPECTRAL SLICING WDM (WAVELENGTH DIVISION MULTIPLEXING) SYSTEM

ABSTRACT

Multiplexing is the transmission of information from one or more source to one or more destination over the same transmission medium. Although transmissions occur on the same facility, they do not necessarily occur at the same time or occupy the same bandwidth. The transmission medium may be a coaxial cable, a satellite microwave system, or an optical fiber cable. There are several domains in which multiplexing can be accomplished, including space, phase, time, frequency and wavelength. However, the three most main methods of multiplexing signals are time-division multiplexing (TDM), frequency-division multiplexing (FDM), and the more recently developed wavelength-division multiplexing (WDM). Wavelength Division Multiplexing is the technique that allows several different signals to be carried along a single fiber at the same time. It achieves this by using different wavelengths for each transmission and can be employed on single mode or multimode fibers.

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