

ABSTRACT

The general WLAN is a office with *access point* which place on strategic area in building around. All *access point* to connect together with used cable. WLAN configuration with a medium fiber optic cable called WLAN *over fibre*. The consequence different medium usage cause WLAN have different character with LAN. So that need the special sublayer *Medium Access Control* (MAC) protocol has defines IEEE 802.11 *Wireless LAN*. MAC *Wireless LAN*, DCF is a fundamental mode to support delivery services in a *Basic Service Set* (BSS). The DCF defines a basic access mechanism for packet transmission is *Carrier Sense Multiple Access with Collision Avoidance* (CSMA/CA) and *Request to Send / Clear to Send* (RTS/CTS) as optional mechanism.

In this final project, the WLAN over fibre network is designed by using NS-2 (*Network Simulator*) to simulate and analyze the *throughput*. The mechanism is use are DCF *basic* mechanism and RTS/CTS mechanism.

As we can see from the result and analyze, the highest *throughput* is in WLAN network with biggest data packet on it, that 6000 *byte*. The smallest *throughput* of WLAN *over fibre* network is 0,1509 Mbps for fibre length 800 m and also for the smallest data packet. The *throughput* increase when we use the RTS/CTS mechanism for the biggest data packet. It is higher about 18,5% than the *throughput* of *basic* mechanism

Keyword : Basic, MAC, Over fiber, RTS/CTS, Throughput.