

ABSTRACT

The necessity of society data services is likely to increase in line to world development. Based on a survey of Indonesian Internet Providers Association (APJII) , in 2012 there were 63 million Indonseia internet users . APJII also predicts that by 2013 internet users in Indonesia will rise to 82 million users , up about 30 % . According to the data , there will be a problem whether the existence of network can handle the problem of users or not ? Otherwise it will degrade decrease the quality of a given provider to the user . It certainly would make detrimental to both parties .

The simulations aim is to analyze the properness of *backhaul* networks formed from fiber optic technology for WiMAX and HSDPA *femtocell* technology as an access network . Will be obtained from the simulation data will be compared with standard data service in HSDPA *femtocell* .

For WiMAX *backhaul* using the results obtained with the *delay* 18.3176ms , *packetloss* 0 % , and *throughput* of 1.063Mbps . While fiber optic *backhaul* using the results obtained with the *delay* 18.3176ms , *packetloss* 0 % , and *throughput* of 1.063Mbps . While the use of fiber optic *backhaul* obtained an average *delay* 11.66ms , 240 088 kbps *throughput* , and *packet loss* amounted to 0.5457 % . From these results when compared to standard TIPHON , ITU G1010 T and ETSI TR 101 856 then it is feasible to be used as HSDPA *femtocell backhaul* .

Keywords : *backhaul* , WiMAX , fiber optics , *femtocells* , HSDPA , *delay* , *packetloss* , and *throughput*