ABSTRACT

This final task discusses the application of scheduling service classes in data communication on mobile WiMAX which is influenced by the presence of background traffic density difference of each scheduling class service and also the speed of movement of the user. WiMAX MAC layer supports the application of the mechanism of Quality of Service (QoS) which is described in the classes of service that each has different characteristics from the bandwidth request mechanisms and also how the request is granted by the base station. And when the sercice flow has been established, the base station calculates teh important parameters such as grant size and the grantl interval lwhich is required for each service class scheduling.

Mobile WiMAX network (IEEE 802.16e) 3.10 is simulated using Network Simulator (ns-3) which carried out the data retrieval performance of a network consisting of delay, jitter, throuhput, and packet loss for thirty seconds. The results show that the background traffic at each scheduling class service contributes an average delay varies depending on class of service scheduling and service of applications used. The addition of the maximum packet delay and the delay in a VOIP application, using the UGS scheduling service class that is equal to 1.589794935 ms and 0.271472936 ms and jitter for the large delay and jitter average measurement consecutive 8.80733 ms and on each additional 100MB of background traffic on each scheduling each service class. In the Video Call application, using the RTPS bertururut consecutively 1.585749114 ms, 0.359499 ms, ms 25.01876, 3.533771832. On the application File Transfer and Web Browsing using NRTPS and BE seen the average delay and jitter are high but with a higher throughput is a maximum of 1.3273702 Mbps. Increase the speed of the user of the testing of up to 200km / hour obtained no significant influence on each scheduling class service that is the increment of 0.001418 ms packet delay at each addition rate of 20 km / hour.

Keyword : Mobile WiMAX (IEEE 802.16e), Scheduling Service Class, NS-3