ABSTRACT

HSDPA adds several new techniques in its implementation that can provide faster service than UMTS, which are *fast link adaptation,* HARQ (*Hybrid Auto Repeat Request*), and AMC (*Adaptive Modulation and Coding*). HSDPA also introduces better *distributed architecture* in the node-B (base station) for handling data transfer so that it can handle fast scheduling and fast retransmission. Data service in HSDPA uses TCP as its transport protocol.

At the beginning, TCP was designed for wired media, but at HSDPA there is air medium which is not stable. Various kinds of TCP variations are made to produce better performance than its predecessor. In this final project, performance of TCP New Reno and TCP Vegas are compared in HSDPA network by varying the windows (5, 10, 15, 20, 25, and 30) and packet sizes (500, 750, 1000, 1250, and 1500). TCP performance is seen in terms of its throughput, packet loss, and end to end delay.

Results obtained in this simulation are TCP Vegas has a better performance than TCP New Reno, TCP Vegas produces greater throughput, smaller pocket loss, and smaller delay than TCP New Reno does. But by increasing error model that causes bigger packet loss, TCP New Reno can show better performance than TCP Vegas does.

Key word: HSDPA, TCP New Reno, TCP Vegas