

## ABSTRACT

*IPTV and mobile WiMAX as one of the services and emerging technologies. IPTV moves on IP-based media. While the mobile WiMAX can support user mobility with high data rates. Therefore, the mobile WiMAX IPTV media can serve either in motion (mobile) or not moving (fixed).*

*Mobile WiMAX supports users to access the service in motion, thus providing mobility for the user. These circumstances would lead to a handover or transfer BS. The problem is on the mobile WiMAX handover stages still slow that has disrupted the process of data transmission, especially in real-time applications such as multimedia streaming that can degrade the quality of IPTV. This research will simulate IPTV multimedia streaming with H.264 codec, to determine the quality of service at a certain speed, especially when users perform a hard handover.*

*In this research carried out simulations using three scenarios handover. Scenario 1 is simulated using 1 user, Scenario 2 is simulated using 5 MS each BS where there is only 1 MS doing handover, and scenario 3 is simulated using 5 MS each BS where the 5 MS doing handover. Based on the results of the simulation using OPNET Modeler 14.5 Educational Version for a maximum speed of 100 km/h was obtained value of end-to-end delay of 23.234 ms, 0.047 ms of jitter, throughput of 637.723 Kbps for scenario 1. While scenario 2 values obtained 27.218 end-to-end delay ms, 0.057 ms of jitter, throughput of 558 881 Kbps. In scenario 3 the value obtained end-to-end delay 35 513 ms, 0013 ms of jitter, throughput of 516.679 Kbps. To reduce or improve these results, it can make changes to the scanning parameters and handover parameters because it will have no effect on the handover delay that would keep yields better throughput when the MS handover.*

*Keywords: Mobile WiMAX, Hard Handover, IPTV, H.264 Codec*