PERFORMANCE ANALYSIS OF VOIP OVER MOBILE WIMAX (IEEE 802.16e) BEST-EFFORT CLASS

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HAZRI RAZIFF BIN OTHMAN
Faculty of Electrical Engineering
UNIVERSITI TEKNOLOGI MARA
40450 SHAH ALAM, SELANGOR

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ABSTRACT

Worldwide Interoperability for Microwave Access or better known as WiMAX is an air-interface standard in accordance with the IEEE 802.16. Mobile WiMAX or IEEE 802.16e standard defines five different service classes which can be used to satisfy the VoIP QoS. In this study, different trajectory is applied to the MS with the encoder of G.711 and G.729 in order to identify which encoder gives the best performance to the VoIP application. This research adds to our understanding how is it realistically possible to use BE service class to support VoIP applications. MOS scale ranging from 5 (excellent) to 1 (bad) is used as the performance metrics employing both encoders. To assure the quality of user experience, parameters such as end-to-end delay, jitter, and throughput are observed too. The simulation was done by using OPNET Modeler 14.5 and the simulation results shows that the BE service class can be used to support the VoIP traffic with good MOS values of up to 80 MS with G.729 encoder.

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