

UNIVERSITI TEKNOLOGI MARA

**PERFORMANCE ANALYSIS OF TRIPLE PLAY
SERVICES OVER MOBILE WiMAX ACCESS
BROADBAND TECHNOLOGY**

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ABSTRACT

In this thesis, a project on Performance Analysis of Triple Play Services over Mobile WiMax Access Broadband Technology is presented. Carrier frequency of 2.3 GHz and 10 MHz bandwidth is set up in the mobile WiMAX network to analyse the Triple play applications of Video Conferencing, Voice Application and Web Browsing. This project is using OPNET Modeler 14.5 as a simulation platform to simulate the delay, jitter, packet loss, throughput and page response time. The simulations are tested for multipath channel model scenarios which are the ITU Pedestrian A and ITU Vehicular B. Furthermore, the performance for different distance of substation from the base station was examined too. Simulation results show that ITU Pedestrian A multipath channel models and Mobile Station with distance 2 km from Base Station give better performance for triple play services.

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CHAPTER I

INTRODUCTION

1.1 PROJECT BACKGROUND

The WiMAX technology, based on IEEE 802.16–2004 standard [1-2], describes a fixed broadband wireless area network. Mobile WiMAX, based on IEEE 802.16e-2005 [3], adds functions and features to the original standard to support mobility. The most current IEEE 802.16–2009 standard [4] is a revision of IEEE 802.16–2004. Contrasted with Mobile WiMAX, 3g data services give a moderately low transfer speed and high value while Wi-Fi experiences constrained transmission ranges and from security issues. The majority of the above lead WiMAX to be a multipurpose system, which can be utilized for remote backhauling for Wi-Fi hotspots, altered or roaming access to network subscribers as seen in Figure 1.1.