IDENTIFICATION OF SIGNAL QUALITY AROUND UITM MAIN CAMPUS

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ABSTRACT

As 3G networks are becoming commercially available all over Malaysia, all of the network providers compete to serve their customer with a good quality and stable network. This project is to analyze the 3G's signal quality and strength that are provided by Maxis Sdn. Bhd around targeted area at UiTM Shah Alam. The collected data from the drive test by using NEMO outdoor network scanner was plotted using Microsoft Excel. The parameters that been focused for this project are Received Signal Code Power (RSCP) which relates to signal strength and Carrier to Noise Density ratio (Ec/No) that are representing the cell quality of the pilot channel (CPICH).[3] Based from the graph obtained, we can see the relationship between each of the parameters that are being investigated.

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CHAPTER 1

INTRODUCTION

1.1 Overview

As we know, mobile telecommunications services has undergone many changes in line with consumer demand as for example; in Malaysia, the network system had evolve from 1G, 2G and the latest are 3G communications system. 4G communications system is still under development and has not been used extensively in Malaysia. The 3G system technology is more complicated compare to 2G system because it involves many aspects, especially overlapping cells, soft hand over, power control and also cell breathing.[1]

The most common deployment for 3G system are Wideband Code Division Multiple Access (WCDMA) which are commonly operated on the 2100 MHz band.[2] WCDMA is one of the new technologies in 3G telecommunications system which had been widely use in all around the world in order to replace the weakness of TDMA and FDMA technologies, such as GSM especially in data transfer and call traffic. [1] In order to ensure seamless coverage and overall good performance of the network, WCDMA is equipped with features which will perform a handover early enough to prevent the connection from being dropped. This feature is defined as soft handover or soft handoff where a cell phone is simultaneously connected to two or more cells (or cell sectors) during a call.[6]

The aim of this project is to study the effect of Received Signal Coded Power (RSCP) and Ec/No of the WCDMA system in term of quality variation. Basically Ec/No measurement defined as ratio of carrier or signal power to the underlying white-noise power spectral density (dB/Hz). Noise power spectral density,No is the noise power in a 1Hz bandwidth.[4] In WCDMA system, RSCP denotes the power measured by a receiver on a particular physical communication channel. It is used as an indication of

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