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ADMISSION CONTROL AFFECTS ON THE CAPACITY AND THE QUALITY OF SERVICE (QoS) IN UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM (UMTS)

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ABSTRACT

Universal Mobile Telecommunications System (UMTS) is the third generation (3G) system that is used in Malaysia. This is a quite new technology and the optimization of the capacity and the Quality of Service will become an issue. Therefore, this work deals with the affects of the admission control which handles the acceptance of new calls. The main objective is to see how the admission control will control the number of traffics or overload situations and drop calls. The admission control can decrease the number of traffics or overload situations and drop calls. From this, the Quality of Service performance will increase. The Quality of Service is increased for the price of a smaller capacity. In this project, all the data had been taken from Celcom Malaysia Berhad in Kepong, Kuala Lumpur.

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CHAPTER 1

INTRODUCTION

1.1 Overview

UMTS is one of the third generation (3G) systems that used in Malaysia. We are using the European standard. UMTS networks will introduce into wide area use a completely new high bit rate radio technology – Wideband Code Division Multiple Access (WCDMA). On the other hand the core network part of the UMTS system is founded on the successful GSM network which has evolved from circuit switched voice network into a global platform for mobile packet services like short messaging, mobile web browsing and mobile e-mail access.

The packet switching traffic in the mobile core networks will exceed circuit switching. This transition is enabled by the UMTS system, which makes it possible for the network operators to provide equally strong circuit-switched and packet-switched domains to meet the speed and capacity demands. Most voice and time-critical data services may still use circuit switching, while less time-sensitive data passes through the UMTS mobile packet core network. One of the key made by the UMTS mobile communications devices is the ability to deliver information to users almost anytime and anywhere. In UMTS the mobile phone is becoming a personal trusted device, a life management tool for work and leisure.

Admission control is the important equipment using in UMTS network. It is located in the controlling RNC (CRNC). The purpose of the AC is to control new arriving calls in communication networks to prevent overload situations. The traffic load of the base station (BS) is limited by the AC to keep the traffic load below the maximum capacity of the BS.