# UNIVERSITI TEKNOLOGI MARA

# PERFORMANCE OF CELL BREATHING IN WCDMA

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## ABSTRACT

This paper investigates the concept of Cell breathing technique. This technique is commonly used in cellular network to overcome load congestion by expanding or shrinking the cell coverage. Traffic constantly varies due to the behavior of the subscribers and the event of the day. This leads the coverage area of the serving cell also changes. In this project, a Node-B of two different areas is chosen to determine the cell breathing margin. COST 231 Hata propagation model is used to predict the cell coverage for urban environment. The comparison between received signal code power for theoretical and drive test has been analyzed. The energy per chip power density (Ec/No) against distance (km) can determine the serving cell. The result shows that, the cell coverage will shrink when the load is higher as compared with light load.

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# INTRODUCTION

## 1.1 Research Background

A mobile communications system is a long journey that evolved from one generation into another generation. From one generation into another generation, the technology changes to meet the user demand. This tremendously changes shows that the growth in the wireless industry has successfully shows their impact in terms of many perspectives [1].

There are stages of mobile technology, starting with 1G which is analog technology and continue with 2G.2G can succesffuly enhance the performance by using digital technology. Next is 3G that is able to support multimedia service and data communications.

Parallelly with 3G enhancement, the need for high quality and high capacity networks, estimating coverage accurately has become extremely important. Wideband Code Division Multiple Access (WCDMA) is a leading wideband digital cellular networks for 3G.