

**Analysis of capacity improvement factor in cellular CDMA radio
network using forward error correcting coding.**

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ABSTRACT.

CDMA or Code Division Multiple Access is one of the great deals of attention in cellular technology. It is using the spread spectrum modulation, which was established for anti-jam and multipath applications as well as for accurate ranging and tracking. CDMA is a digital communication, which is established for a better capacity rather than TDMA and FDMA. This project is to will search and study on how capacity can be increase by using Forward Error Correcting Coding method.

Forward Error Correcting Coding is a method to control error and protect signals from interference while it is being transmitted. Capacity of cellular CDMA radio is related to BER (Bit Error Rate) and SNR (Signal-To- Noise Ratio) which is it can be improve by increasing the SNR and reducing BER. This project will be implemented by using MATLAB to find out the difference of the signal after FEC.

At the end of this project, we will see that by using the Forward Error Correcting Coding, capacity of the cellular CDMA radio wills successfully being improved as FEC can increase bit rate and protect the transmitting signal from error. This project will enhance the understanding on the growth of cellular technology in the market nowadays.

Keyword: FDMA, TDMA, CDMA, FEC, BER, SNR, and spread spectrum modulation.

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CHAPTER 1

INTRODUCTION

1.0) Introduction

Mobile radio communication has constantly grown in importance during the last few decades and particularly the last few years to technical advances in transmission. In contrast to wireline, mobile radio networks that comply with the wish for geographically unrestricted communication can be used anywhere due to flexibility of the network coverage. In chapter 1, there will be a discussion and explanation regarding to this topic.

1.1) Background Of The Project

In order to fulfill the increasing demand of this technology, cellular CDMA radio network had arises and offer wider capacity that can fix a lot of user at one time. Code Division Multiple Access or CDMA is one of the world most popular digital telecommunication that offer better capacity for voice and data communication than other commercial mobile technology. It is widely use in mobile communication and the first product of CDMA is IS-95 that was developed by Qualcomm and the latest now is 3G.