

﴿قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ الْحَكِيمُ﴾

البقرة ٣٢

**وعن أبي هريرة رضي الله عنه عن النبي**

**ﷺ**

**من سلك طريقا يلتمس فيه علما سهل...**

**...الله له به طريقا إلى الجنة**

**رواه مسلم**

## **DEDICATION**

To who like the learning

To all our friends and all who made this project come true

To my dear parents and brothers

## **ACKNOWLEDGEMENT**

I wish to express my true thanks, first of all, to ALLAH (SWT) who helped supported, and guided me by every mean during the stages of this work.

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## **ABSTRACT**

In this thesis an adaptive handover algorithm was developed which attempted to minimize probability of handover occurrence and decreased the number of handovers in the cellular system in the mobile network and in turn it reduce the load on the switching center based on the traffic in the neighboring cells and considering the quality of call.

The extracted results compared with latest traditional handover algorithm and these results showed noticeable improvement in reduce the probability of handover occurrence and in turn reduce the number of handover based on the traffic and consider to quality of call in the same time.

This showed the importance of this algorithm and its implementation will get the wanted results.

# تجريد

في هذا الكتاب نعرض لكم مجموعة من النصوص التي تم جمعها من مختلف المصادر التاريخية والادبية. نهدف من خلال هذا العمل إلى تسهيل الوصول إلى هذه النصوص وتقديمها بطريقة واضحة ومبسطة. نأمل أن يكون هذا الكتاب مفيداً للقارئ.

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## TABLE OF CONTENTS

الآية.....	i
DEDICATION .....	ii
ACKNOWLEDGEMENT .....	iii
تجريد.....	iv
ABSTRACT.....	v
LIST OF TABLES.....	viii
LIST OF FIGURES.....	ix
LIST OF ACRONYMS.....	xi
CHAPTER 1: INTRODUCTION.....	1
1.1 Introduction.....	2
1.2 Problem Statement.....	3
1.3 Objectives.....	3
1.4 Approach.....	4
1.5 Expected Results.....	4
1.6 Thesis structure .....	4
CHAPTER 2: MOBILE COMMUNICATION.....	5
2.1 Introduction.....	6
2.2 The channel assignment.....	11
2.3 The handover process.....	11
2.3.1 Introduction.....	11
2.3.2 Roaming.....	16
2.4 The performance limitations.....	17
2.5 The size of cell.....	19
2.6 The mobile traffic.....	21
2.7 The Erlang B model.....	24
2.7.1 Limitations of the Erlang B.....	26
2.8 The Erlang C model.....	28

2.9 Alternative Models for Mobile Network Traffic.....	30
2.10 Measurement the quality level.....	32
2.9.1 Error Rate .....	32
2.9.2 Bet Error Rate.....	32
<b>CHAPTER 3: PROPOSED HANDOVER ALGORITHM.....</b>	<b>33</b>
3.1 Introduction.....	34
3.2 Handover scenario.....	34
3.2.1 Synchronized versus Nonsynchronized handover.....	34
3.2.2 The types of handover.....	35
3.2.2.1 Intra-BTS handover.....	35
3.2.2.2 Intra-BSC handover.....	36
3.2.2.3 Intra-MSC handover.....	36
3.2.2.4 Inter-MSC handover.....	37
3.3 The handover Decision Algorithm.....	39
3.3.1 The previous handover algorithms.....	39
3.3.2 Two classes of handover decision algorithms.....	40
3.3.2.1 Traditional of handover decision algorithms.....	41
3.4.2.2 Pattern recognition of handover decision algorithms.....	43
3.4 Distance-based dynamic hysteresis value algorithm.....	45
3.5 The proposed handover algorithm.....	50
<b>CHAPTER 4: THE SIMULATION .....</b>	<b>55</b>
4.1 Introduction.....	56
4.2 Physical model.....	56
4.3 Mathematical model.....	57
4.4 Simulation model.....	57
4.5 Simulation flow chart.....	59
4.6 Description of algorithm.....	60
4.7 Simulation code.....	61
<b>CHAPTER 5: THE RESULTS &amp; DISCUSSIONS.....</b>	<b>65</b>

5.1 The generated random variable.....	66
5.2 The results.....	66
<b>CHAPTER 6: CONCLUSION &amp; RECOMMENDATION.....</b>	<b>81</b>
6.1 Conclusion.....	82
6.2 Recommendations.....	83
<b>REFERENCES.....</b>	<b>84</b>



## LIST OF TABLES

<b>Table No.</b>	<b>Title</b>	<b>Page no</b>
4.1	The simulation parameters.	58
5.1	case (1) the traffic high for all cells and the distance-hysteresis small	67
5.2	case (2) the traffic low for serving cell but the call quality low and the distance-hysteresis small	68
5.3	case (3) the traffic low for serving cell and the call quality high and the distance-hysteresis small	70
5.4	case (4) the traffic high for all cells and the distance-hysteresis medium	71
5.5	case (5) the traffic low for serving cell but the call quality low and the distance-hysteresis medium	73
5.6	case (6) the traffic low for serving cell and the call quality high and the distance-hysteresis medium	74
5.7	case (7) the traffic high for all cells and the distance-hysteresis large	76
5.8	case (8) the traffic low for serving cell but the call quality low and the distance-hysteresis large	78
5.9	case (9) the traffic low for serving cell and the call quality high and the distance-hysteresis large	89

## LIST OF FIGURES

Figure No.	Title	Page No.
2.1	a typical cellular network	7
2.2	Frequency Reuse	8
2.3	handover process	12
2.4	handover occurs when user moves from one cell to another	12
2.5	handover requests are queued while users move from point (a) to point (b).	13
2.6	The four different cases of handover	14
2.7	handover or handoff between two MSCs	15
3.1	Intra-BTS Handover	35
3.2	Intra-BSC Handover	36
3.3	Intra-MSC Handover	37
3.4	Inter-MSC Handover and Subsequent Handover	38
Two classes of handover algorithms	3.5	41
3.6	traditional handover algorithms (threshold)	42
3.7	traditional handover algorithms	43
3.8	handover decision algorithm using pattern Recognition	44
3.9	handover probability and distance	48
3.10	an umbrella cell	50
3.11	flow chart of the proposed algorithm	53
3.12	Example for BSC area	54
4.1	Cluster with 7 cells	56
5.1	case (1) the traffic high for all cells and the distance-hysteresis small	67
5.2	case (2) the traffic low for serving cell but the call quality low and the distance-hysteresis small	69
5.3	case (3) the traffic low for serving cell and the call quality high and the distance-hysteresis small	70
5.4	case (4) the traffic high for all cells and the distance-hysteresis medium	72
5.5	case (5) the traffic low for serving cell but the call	73

	quality low and the distance-hysteresis medium	
5.6	case (6) the traffic high for serving cell and the call quality high and the distance-hysteresis medium	75
5.7	case (7) the traffic low for all cells and the distance-hysteresis large	77
5.8	case (8) the traffic high for serving cell but the call quality low and the distance-hysteresis large	78
5.9	case (9) the traffic low for serving cell and the call quality high and the distance-hysteresis large	80

## LIST OF ACRONYMS

Symbol	Acronym
1G	First Generation
2G	Second Generation
3G	Third Generation
4G	Fourth Generation
AM	Amplitude Modulation
AMPS	Advanced Mobile Phone Service
AP	Access Point
ASS	Adaptive Antenna System
ATM	.Asynchronous Transfer Mode
BS	Base Station.
BSC	Base Station Controller
BTS	Base Transceiver Station
CCS	Control Channel System
CDF	Cumulative Distribution Functions
CDMA	Code Division Multiple Access
C/I	Carrier to Interference Ratio
CRC	Cyclic Redundancy Checking
DCA	Dynamic Channel Assignment
ETSI	European Telecommunications Standards Institute
FCA	Fixed Channel Assignment
FDD	Frequency Division Duplexing
FDM	Frequency Division Multiplexing
FDMA	Frequency Division Multiple Access
FM	Frequency Modulation
FRF	Frequency Re-use Factor
GSM	Global System for Mobile
HO	Handover or Hand off
ISM	Industrial-Scientific-Medical
ISPs	Internet Service Providers
LAN	Local Area Network
LLC	Logical Link Control
LOS	Line Of Sight
MAC	Media Access Control
MAN	Metropolitan Area Network
MBWA	Mobile Broadband Wireless Access
MSC	Mobile switching center
MTSO	Mobile Telephone Switching Office
NSS	Network and switching system
OFDMA	Orthogonal Frequency Division Multiple Access

OSS	Operation Subsystem
P	Probability
PCM	Pulse Code Modulation
PCS	Personal Communication System
PHY	Physical Layer
PLMN	Public Land Mobile Network
PoB	Probability of Blocking
PSTN	Public Switched Telephone Network
QoS/GoS	Quality of Service(or Grade of Service)
RF	Radio Frequency
RSS	Radio Subsystem
SACCH	Slow Associated Control Channel
SDCCH	Standalone Dedicated Control Channel
S/I	Signal to Interference Ratio
SME	Small to Medium Enterprise
SMSs	Short Message Services
SOHYP	Sum of Hyper exponential
SS	Subscriber Station
TDD	Time Division Duplexing
TDM	Time Division Multiplexing
TDMA	Time Division Multiple Access
WCDMA	Wideband Code Division Multiple Access