Salwa Akl

بسم اللّه الرحمن الرحيم

مركز الشبكات وتكنولوجيا المعلومات

قسم التوثيق الإلكتروني

Salwa Akl

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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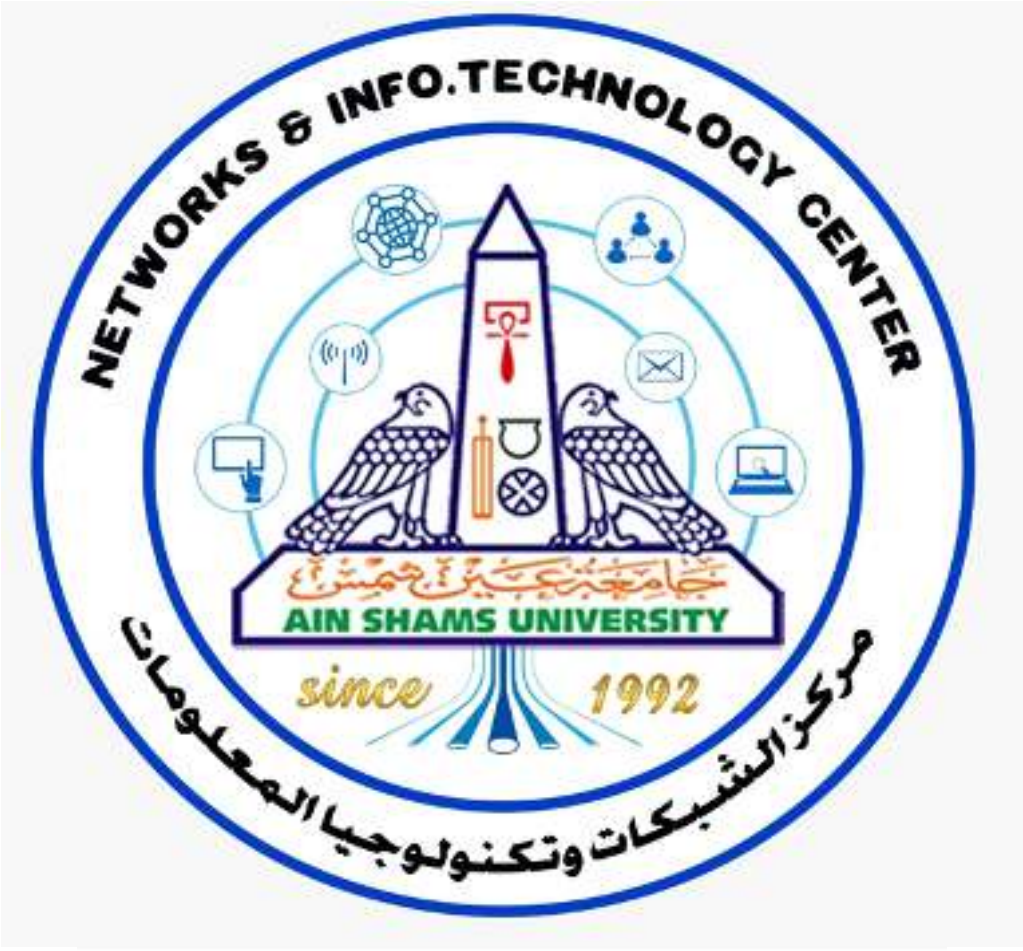

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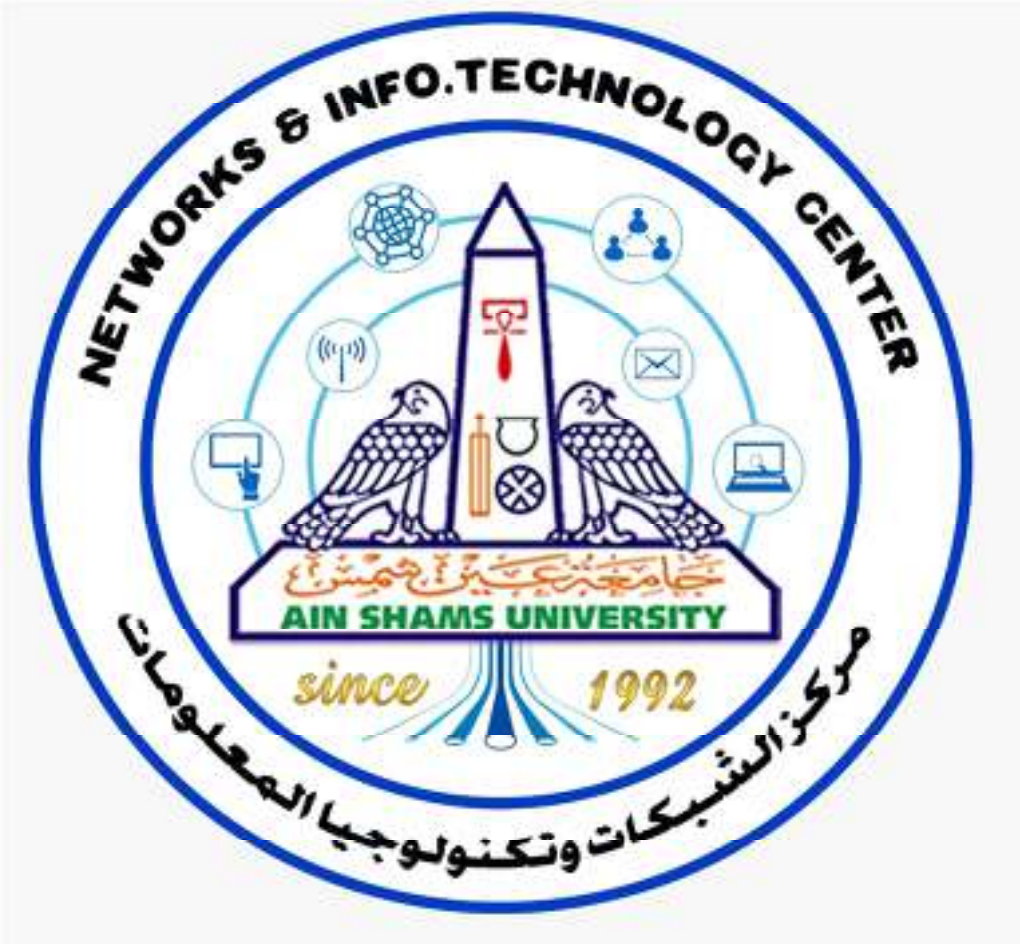

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وبالرسالة صفحات لم ترد بالأصل

FACULTY OF ENGINEERING - ALEXANDRIA UNIVERSITY

DIGITAL MOBILE RADIO COMMUNICATIONS

A thesis submitted to the
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Ph. D.

By

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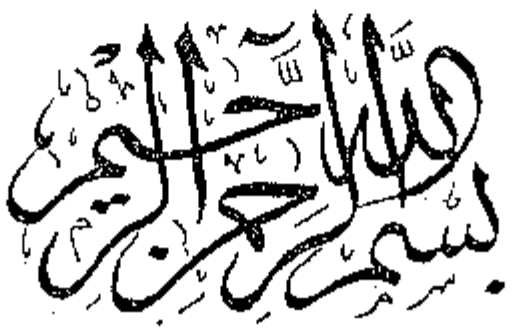
بسم الله الرحمن الرحيم

We certity that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a dissertation for the degree of P. D. .

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Dedicated
to my parents

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CONTENTS

CHAPTER III : DIGITAL MODULATION AND DEMODULATION TECHNIQUES

LIST OF SYMBOLS

A :

A	Amplitude of the transmitted signal.
A_i	Amplitude of the i th component.
A_o	Amplitude of the carrier signal.
$A(t)$	Amplitude of the received faded signal.
a_k	Input data to the convolutional encoder.

B :

B	The bandwidth.
$B(k)$	A positive integer taking the values 1, 3, 5, 7, 9, 11, 13 or 15.
b_o	The variance of the Gaussian noise components v(t) and u(t).

C :

c	c = 1 or 0, in Chapter II, is the transmitted code word.
$C(t)$	The coherent master oscillator's signal.
$C(t)_i$	The coherent i th oscillator's signal.
C_k	The output of the phase mapper.
C	a constant.

D :

D	a constant.
d_{min}	The minimum distance between any transmitted code sequence and the received binary sequence.
$d_1(t)$	The output of the one-bit differential detector of the two-state trellis coded 4-DPSK demodulator
$d_2(t)$	The output of the two-bits differential detector of the two-state trellis coded 4-DPSK demodulator
$d_{1I}(t)$	The output of the in-phase channel of the one-bit differential detector of the four-state trellis coded 4-DPSK and 8-DPSK demodulator.
$d_{1Q}(t)$	The output of the quadrature channel of the one-bit differential detector of the four-state trellis coded 4-DPSK and 8-DPSK demodulator.
$d_{2I}(t)$	The output of the in-phase channel of the two-bit differential detector of the four-state trellis coded 4-DPSK and 8-DPSK demodulator.
$d_{2Q}(t)$	The output of the quadrature channel of the two-bits differential detector of the four-state trellis coded 4-DPSK and 8-DPSK demodulator.
d_o	The variance of the lognormal line-of-sight component.

E :

E	The pulse energy.

F :

f_m	The highest frequency contained in the waveform.
f_c	carrier frequency.
f_i	frequency of the i th sinusoid.
$f_{D_{max.}}$	maximum Doppler shift.
f_o	The intermediate frequency.

G :

G	coding gain.

H :

h_1	The base station antenna height.
h_2	The mobile unit antenna height.
h_p	The height of obstruction.
$H_F(f)$	The transfer function of the fading channel due to the Doppler effect.
$\tilde{H}_F(mf)$	The frequency response sample no. m .
$h_F(t)$	The impulse response of the fading channel due to the Doppler effect.
$h_F(nT)$	The sample no. n of the impulse response.

I :

i	positive integer.
$I(t)$	in-phase signal component in the QPSK modulator.
$I(t)$	in-phase signal component in the MSK modulator.

J :

j'	Number of bits shifted in the shift register of the convolutional encoder.
j	A positive integer, j = 0, 1, 2 or 3, it denotes the no. of the state at time k.