بسم الله الرحمن الرحيم

وَالْعَصْرِ(1) إِنَّ الْإِنْسَانَ لَفِي خُسْرٍ(2) إِلَّا الَّذِينَ آمَنُوا وَعَمِلُوا الصَّالِحَاتِ وَتَوَاصَوْا بِالْحَقِّ وَتَوَاصَوْا بِالصَّبْرِ(3)

صدق الله العظيم

سورة العصر

DEDICATION

To my dear parents Fatima and James, my precious lovely fiancée Abdu, my sweet sister Awatif my dear brothers Daw,Mehmmoud,Magdi,Abdu,Musa and sweety Omnia.

You always have been such support and inspiration; you are the best that anybody could ever have in his life…

To every one had ever contributed in building the knowledge and experience i have.

To every who spent some of his time reading this thesis, tiring to benefit from it…

I dedicate this modest attempt

Awadia

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ABSTRACT

Due to the development of the information and telecommunication technologies that use the frequency spectrum; and with rapid growth of wireless communications many exciting new technologies that will require ever more spectrum, it was necessary to find a method to manage the frequency spectrum to avoid the interference.

Spectrum management is the process that allows maximum number of users to use the electromagnetical spectrum and it can be done through assignment, monitoring and engineering of frequency spectrum to ensure there is no interference and the clear spectrum is available.

The spectrum management plays a vital role in the economic, social and cultural development, as well as its importance for national integrity and the security of the population, the management of a country's territory and the well being of its citizens.

تجريـــــــــــد

نسبة للتقدم الذى طرأ فى مجال تكنلوجيا الاتصالات والمعلومات والتى تستخدم الطيف الترددى ، بالاضافة الى النمو المضطرد فى الاتصالات اللاسلكية الذى أدى الى ظهور تقنيات جديدة تتطلب ترددات اضافية كان من الضرورى ايجاد طريقة مثلى لادارة الطيف الترددى ومراقبته لتجنب التشويش.

ادارة الطيف الترددي هى العملية التي تسمح لأكبر عدد من الناس لاستخدام الطيف الكهرومغنطيسى والتي تنجز عبر هندسة ومراقبة وتخصيص الطيف الترددي لتأكيد إن هناك طيف نظيف وغير مشوش متاح.

تلعب إدارة الترددات دورا هاما فى تنمية القطاع الاقتصادى والاجتماعى والثقافى للدولة بالاضافة الى , ذلك هى مهمة من اجل سلامة وامن السكان وكذلك تمثل ادارة موارد الدولة مما ينعكس على السكان.

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ABBREVIATION

RF	Radio Frequency
ITU	International Telecommunication Union
KHZ	Kilo Hertz
MHZ	Mega Hertz
GHZ	Giga Hertz
MIFR	Master International Frequency Register
CEPT	European Conference of Postal and Telecommunications Administrations
CITEL	Commission Internanericana Telecommunications
VLF	Very Low Frequency
LF	Low Frequency
MF	Medium Frequency
HF	High Frequency
VHF	Very High Frequency

UHF	Ultra High Frequency
SHF	Super High Frequency
EHF	Extreme High Frequency
GEO	Geo-stationary Earth Orbit
LEO	Low Earth Orbit
FM	Frequency Modulation
AM	Amplitude Modulation
ADSL	Asymmetric Digital Subscriber Line
ATM	Asynchronous Transfer Mode
GSM	Global System for Mobile Communication
TDMA	Time Division Multiple Access
CDMA	Code Division Multiple Access
ITU-R	International Telecommunication Union Radiocommunication
EMC	Ensuring Electromagnetic Compatibility
TC++	Turbo C++ (Programming language)
AT&T	American Telegraph and Telephone (American

Company)