

UNIVERSITI TEKNOLOGI MARA

RESOURCE ALLOCATION FOR OFDMA BASED
COGNITIVE RADIO IN WIRELESS REGIONAL
AREA NETWORK

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IN WIRELESS REGIONAL AREA NETWORK**

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ABSTRACT

Orthogonal Frequency Division Multiple Access (OFDMA) will be the predominant technology for the air interface of broadband mobile wireless system for the next decades. In recent years, OFDMA platform for IEEE 802.22 based on cognitive radio (CR) are rolled out for commercial used. The first worldwide application of cognitive radio (CR) networks in unlicensed television broadcast bands is IEEE 802.22, Wireless Regional Area Network (WRAN). CR is the key technology that will enable flexible, efficient and reliable spectrum use by adapting the radio's characteristics to the real-time conditions of the environment. Resource allocation plays an important role in communication networks as a way of optimizing the assignment of available resources to achieve a network design objective and at the same time guarantee the QoS for all users. Efficiency, power consumption and QoS factors should be taken into account by mapping algorithms. This paper investigates the OFDMA based cognitive radio resource allocation problems in WRAN networks.

CONTENTS

	Pages
ACKNOWLEDGEMENT	iv
ABSTRACT	v
CONTENTS	vi
LIST OF FIGURES	viii
LIST OF TABLES	ix
LIST OF ABBREVIATIONS	x
1.0 INTRODUCTION	1
1.0 Background	1
1.1 Contribution of study	2
1.2 Problems Statement	2
1.3 Objectives	3
1.4 Scope of study	3
1.5 Organization of the Dissertation	3
2.0 LITERATURE REVIEW	5
2.0 Introduction	5
2.1 Orthogonal Frequency Division Multiple Access (OFDMA)	6
2.1.1 OFDMA parameters	7
2.1.2 Resource Allocation in OFDMA	8
2.2 Cognitive Radio	9
2.2.1 Cognitive capability	11
2.2.2 Reconfigurability	11
2.3 IEEE 802.22 Wireless Regional Area Network	11
2.3.1 Topology, Entities and Relationship	12
2.3.2 Service Capacity	12
2.3.3 Service Coverage	13
2.3.4 The IEEE 802.22 Air Interface	13
3.0 METHODOLOGY	14
3.0 Introduction	14
3.1 Data simulation	14
3.1.1 Channel capacity	14