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RESOURCE ALLOCATION FOR OFDMA BASED COGNITIVE RADIO 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