1. Record Nr. UNINA9910820091803321

Autore	Benmammar Badr
Titolo	Radio resource allocation and dynamic spectrum access / / Badr Benmammar, Asma Amraoui
Pubbl/distr/stampa	London, : ISTE Hoboken, N.J., : Wiley, 2013
ISBN	9781118575116 1118575113 9781118574355 1118574354 9781118574836 1118574834 9781299186620 1299186629
Edizione	[1st edition]
Descrizione fisica	1 online resource (94 p.)
Collana	Focus series in waves, , 2051-2481
Altri autori (Persone)	AmraouiAsma
Disciplina	621.38411
Soggetti	Cognitive radio networks Radio resource management (Wireless communications) Radio frequency allocation - Management
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Title Page; Contents; ACRONYMS; INTRODUCTION; CHAPTER 1. WIRELESS AND MOBILE NETWORKS; 1.1. Introduction; 1.2. Wireless networks; 1.2.1. Definition; 1.2.2. Function of a wireless network; 1.2.2.1. Network with infrastructure; 1.2.2.2. Network without infrastructure The network without infrastructure, which is referred to as ad hoc network or independen; 1.2.3. Types of wireless networks; 1.2.3.1. Wireless personal area network The wireless personal area network (WPAN) is composed of connections between devices tha; 1.2.3.2. Wireless local area network 1.2.3.3. Wireless metropolitan area network1.2.3.4. Wireless wide area network; 1.2.3.5. Wireless regional area network; 1.2.4. Different types of existing wireless networks; 1.2.4.1. Networks using infrared waves

Infrared waves are commonly used in everyday (in television remote controls, for example); 1.2.4.2. Networks using radio waves; 1.2.5. IEEE 802.22 standard; 1.3. Mobile networks; 1.3.1. Wireless and mobility; 1.3.2. Mobility; 1.3.3. Cellular architecture; 1.3.4. Architecture of a cellular network; 1.3.5. Telephony; 1.3.6. Development of cellular systems; 1.3.6.1. First generation
1.3.6.2. Second generation1.3.6.3. Third generation; 1.3.6.4. Fourth generation; 1.4. WiMAX mobile and 4G; 1.5. Conclusion; CHAPTER 2. COGNITIVE RADIO; 2.1. Introduction; 2.2. Software radio; 2.2.1. Software-defined radio (SDR); 2.3. Introduction to cognitive radio; 2.3.1. History; 2.3.2. Definition; 2.3.3. Relationship between cognitive radio and software-defined radio; 2.3.4. Structure; 2.3.5. Cognition cycle; 2.3.6. Components of cognitive radio; 2.3.7. Functions of cognitive radio; 2.4. Languages of cognitive radio; 2.5. Domains of cognitive radio applications; 2.6. Conclusion
CHAPTER 3. MULTI-AGENT SYSTEMS3.1. Introduction; 3.2. Definition of an agent; 3.2.1. The multidimensional characteristics of an agent; 3.2.2. An agent's concrete architecture; 3.2.2.1. Architecture of logical agents; 3.2.2.2. Reactive architecture; 3.2.2.3. BDI architecture; 3.2.2.4. Multilevel architecture The objective of a multilevel architecture is to conduct a constructive synthesis of the reacti; 3.2.3. Model of an agent; 3.3. Multi-agent systems; 3.3.1. Communication between agents; 3.3.1.1. Coordination protocols; 3.3.1.2. Cooperation protocols; 3.3.1.3. Negotiation
3.4. Application of MAS in telecommunications3.4.1. MAS applications on the Web; 3.4.2. Application of MAS in virtual private networks; 3.4.3. Using MAS in the setting of third generation mobiles; 3.4.4. Application of MAS in network supervision and management; 3.5. Conclusion; CHAPTER 4. DYNAMIC SPECTRUM ACCESS; 4.1. Introduction; 4.2. Intelligent algorithms; 4.2.1. Neural networks; 4.2.2. Fuzzy logic; 4.2.3. Genetic algorithms; 4.3. Dynamic spectrum access; 4.3.1. Spectrum access using the auction approach; 4.3.2. Spectrum access using game theory
4.3.3. Spectrum access using Markov's approach

Sommario/riassunto

We are currently witnessing an increase in telecommunications norms and standards given the recent advances in this field. The increasing number of normalized standards paves the way for an increase in the range of services available for each consumer. Moreover, the majority of available radio frequencies have already been allocated. This explains the emergence of cognitive radio (CR) - the sharing of the spectrum between a primary user and a secondary user. In this book, we will present the state of the art of the different techniques for spectrum access using cooperation and competition t