1. Record Nr. UNINA9910812094103321

   Autore Sithamparanathan Kandeepan

   Titolo Cognitive radio techniques : spectrum sensing, interference mitigation, and localization / / Kandeepan Sithamparanathan, Andrea Giorgetti

   Pubbl/distr/stampa Boston, Massachusetts : , : Artech House, , ©2012
   [Piscataqay, New Jersey] : , : IEEE Xplore, , [2012]

   ISBN 1-60807-204-5

   Descrizione fisica 1 online resource (395 p.)

   Collana Artech House mobile communications library

   Altri autori (Persone) GiorgettiAndrea

   Disciplina 395

   Soggetti Cognitive radio networks

   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 Cognitive Radio Techniques Spectrum Sensing, Interference Mitigation, and Localization; Contents; Preface; 1 Introduction to Cognitive Radios; 1.1 Introduction; 1.2 Definition of Cognitive Radios; 1.3 Software-Defined Radios; 1.4 The Cognitive Cycle; 1.5 The Radio Scene Analysis; 1.5.1 Spectrum Occupancy Classification; 1.5.2 Hidden Terminals; 1.5.3 Locating Primary Users; 1.6 Dynamic Spectrum Access and Management; 1.6.1 Spectrum Underlay and Overlay; 1.7 Regulatory Aspects; 1.7.1 The IEEE DySPAN Standards Committee; 1.7.2 The IEEE 802.22 WRAN Standards
   1.7.3 The ETSI-RRS Technical Committee1.8 Application Clusters; 1.8.1 Cellular Mobile Networks; 1.8.2 Energy Efficiency is Wireless Networks; 1.8.3 Public Safety Communications; 1.8.4 Coexistence of UWB Radio Technology; 1.8.5 Wireless Networks for Smart Grids; 1.8.6 Vehicular Networks; 1.8.7 Defense Application Systems; References; Part I: Spectrum Sensing in Cognitive Radios; 2 Fundamentals of Spectrum Sensing and Detection; 2.1 Introduction; 2.2 Statistical Detection Techniques; 2.2.1 Maximum A Posteriori Detection; 2.2.2 Maximum Likelihood Detection; 2.2.3 The Neyman-Pearson Detector
   2.2.4 The Bayesian Risk-Based Detector2.3 Continuous and Discrete Signal Detection; 2.4 Detection Performance; 2.4.1 Detection Performance Versus the SNR; 2.4.2 Detection Performance Versus the Signal Observation Length; 2.4.3 The ROC Curves; 2.4.4 Area Under the ROC Curves; 2.5 Wireless Channel Models; 2.5.1 Mean Pathloss; 2.5.2

| Sommario/riassunto | Providing an in-depth treatment of the core enablers of cognitive radio technology, this unique book places emphasis on critical areas that have not been sufficiently covered in existing literature. You find expert guidance in the key enablers with respect to communications and signal processing. The book presents fundamentals, basic solutions, detailed discussions of important enabler issues, and advanced algorithms to save you time with your projects in the field. For the first time in any book, you find an adequately detailed treatment of spectrum sensing that covers nearly every aspect of the subject. Moreover, this valuable resource provides you with thorough working knowledge of localization and interference mitigation as enablers of cognitive radio technology. The book includes all the necessary mathematics, statistical and probabilistic treatments, and performance analysis to give you a comprehensive understanding of the material. |