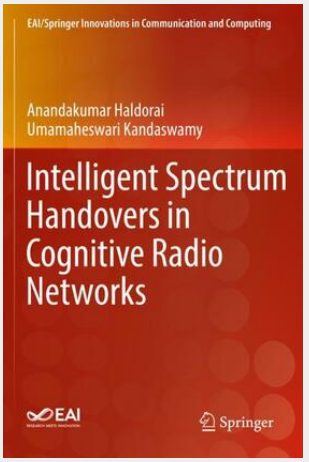
Kandaswamy / Haldorai

Intelligent Spectrum Handovers in Cognitive Radio Networks



This book highlights the need for an efficient Handover Decision (HD) mechanism to perform switches from one network to another and to provide unified and continuous mobile services that include seamless connectivity and ubiquitous service access. The author shows how the HD involves efficiently combining handover initiation and network selection process. The author describes how the network selection decision is a challenging task that is a central component to making HD for any mobile user in a heterogeneous environment that involves a number of static and dynamic parameters. The author also discusses prevailing technical challenges like Dynamic Spectrum Allocation (DSA) methods, spectrum sensing, cooperative communications, cognitive network architecture protocol design, cognitive network security challenges and dynamic adaptation algorithms for cognitive system and the evolving behavior of systems in general. The book allows the reader to optimize the sensing time for maximizing the spectrum utilization, improve the lifetime of the cognitive radio network (CRN) using active scan spectrum sensing techniques, analyze energy efficiency of CRN, find a secondary user spectrum allocation, perform dynamic handovers, and use efficient data communication in the cognitive networks. - Identifies energy efficient spectrum sensing techniques for Cooperative Cognitive Radio Networks (CRN); - Shows how to maximize the energy capacity by minimizing the outage probability; - Features end-of-chapter summaries, performance measures, and case studies.

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90,94 €
84,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783030154189
Medium: Buch
ISBN: 978-3-030-15418-9
Verlag: Springer International Publishing
Erscheinungstermin: 14.08.2020
Sprache(n): Englisch
Auflage: 1. Auflage 2019
Serie: EAI/Springer Innovations in Communication and Computing
Produktform: Kartoniert
Gewicht: 359 g
Seiten: 217
Format (B x H): 155 x 235 mm

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