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Nota di contenuto	Preface -- List of Abbreviations -- A guide to the book -- 1. Introduction -- 1.1 The vision of Ambient Intelligence -- 1.2 Application examples -- 1.3 Types of applications -- 1.4 Challenges for WSNs -- 1.5 Why are sensor networks different? -- 1.6 Enabling technologies -- PART I: ARCHITECTURES -- 2. Single node architecture -- 2.1 Hardware components -- 2.2 Energy consumption of sensor nodes -- 2.3 Operating systems and execution environments -- 2.4 Some examples of sensor nodes -- 2.5 Conclusion -- 3. Network architecture -- 3.1 Sensor network scenarios -- 3.2 Optimization goals & figures of merit -- 3.3 Design principles for WSNs -- 3.4 Service interfaces of WSNs -- 3.5 Gateway concepts -- 3.6 Conclusion -- PART II: COMMUNICATION PROTOCOLS. -- 4. Physical Layer -- 4.1 Introduction -- 4.2 Wireless channel and communication fundamentals -- 4.3 Physical layer & transceiver design considerations in WSNs -- 4.4 Further reading -- 5. MAC Protocols 133 -- 5.1 Fundamentals of (wireless) MAC protocols -- 5.2 Low duty cycle protocols and wakeup concepts -- 5.3 Contention-based protocols -- 5.4 Schedule-based protocols -- 5.5 The IEEE 802.15.4 MAC protocol -- 5.6 How about

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Sommario/riassunto

Wireless sensor networks will revolutionise applications such as environmental monitoring, home automation, and logistics. *Protocols and Architectures for Wireless Sensor Networks* provides a thorough description of the most important issues and questions that have to be addressed in a wireless sensor network. Wireless sensor networks combine current research trends from a number of different disciplines / hardware design, information & signal processing, and communication networks to name but a few. This single resource makes the crucial aspects of these research fields accessible to the reader. The authors give an overview of the current state-of-the-art and put all the individual solutions into perspective with each other. *Protocols and Architectures for Wireless Sensor Networks*: . Covers architectures and communications protocols in detail, illustrating solutions with practical implementation examples and case studies.. Provides an understanding of mutual relationships and dependencies between different protocols and architectural decisions.. Offers an in-depth investigation of relevant protocol mechanisms.. Shows which protocols are suitable for which tasks within a wireless sensor network and in which circumstances they perform efficiently. This singular text provides academic researchers, graduate students in computer science, computer engineering, and electrical engineering, as well as practitioners in industry and research engineers, with an understanding of the specific design challenges and solutions for wireless sensor networks.
