

Preface

Wireless sensor networks (WSN) is a family of technologies which combine sensing, data processing, and wireless ad-hoc networking, and enable new application scenarios. A networked sensor can be a radar station, pollution monitor, video camera, mobile phone, heart rate monitor, or an ID tag.

In this book, we take resource contained WSN technologies into study. These kinds of WSN nodes are small, cheap, operate on batteries, and automatically form networks of thousands of measurements points. Together, the nodes form a distributed platform performing monitoring, object tracking, and control functions. These kinds of ubiquitous WSNs are an enabling technology for environmental and condition monitoring, home automation, security and alarm systems, industrial monitoring and control, military reconnaissance and targeting, and interactive games, to mention just a few.

This book describes low-power WSN as a platform by presenting the WSN services that can be used as building blocks for the applications. It explains the implications of resource constraints and expected performance in terms of throughput, reliability and latency.

The book builds on our experiences on developing WSN platforms, protocols, and prototyping with different applications. The book eases going through the vast design space of WSNs when putting together the platforms, communications, and application requirements. The book is a concise report of the state of the art in resource contained WSNs, making it easier for students, engineers, and researchers to adopt this emerging area of technology.

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Low-Power Wireless Sensor Networks

Protocols, Services and Applications

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