Preface

Book's Overview and Features

Wireless sensor networks (WSNs) have quickly become an area of great interest in terms of research for both industry and academia. Nowadays, the enormous potential of this technology can be easily seen, along with its inherent difficulties. Just looking at the number of research projects being funded, mainly European- and U.S.-based, the many research papers being published, and the results being put on the market gives clear evidence of the technology's growing importance. In fact, the Massachusetts Institute of Technology recently classified WSNs as one of the 10 emerging technologies that will change the world.

This book is the result of intensive research carried out over several months as part of a European research project. It constitutes a wide review of the current state of the art regarding wireless sensor networks at the time of its writing. Contributions have been made by several researchers from various organizations.

Other research teams and European projects have also made very valuable contributions in the field of wireless sensor networks. However, to the best of our knowledge, this book is the only one encompassing all of the following characteristics:

- It is entirely dedicated to wireless sensor networks and comprises all of the main technological challenges associated with them: from hardware to specific applications, including networking, middleware, and software issues.
- It not only includes a review of commercially available products and solutions, but also examines European research projects concerning WSNs and open issues currently of interest for researchers in this area. Moreover, there is also a chapter devoted to regulatory and safety issues related to this technology.
- It includes a description of several exemplifying application scenarios in which the use of a WSN solution is very attractive, something that may inspire current and future applications.

Target Audiences

All of these features make the book useful for a wide range of potential readers, including researchers in the computer/wireless communications sector, lecturers for advanced communication courses, graduate students beginning research in computer/wireless communications, professionals wanting to offer WSN solutions, and even WSN application designers.

Our aims are to help the reader grasp the main technological issues to be considered when dealing with WSNs, to give a high-level overview of the different technologies available, and to pave the way for an eventual deeper study of specific aspects of this wireless technology.