According to the reports of the United Nations, road traffic injuries are a major public health problem and a leading cause of death, injury, and disability around the world. Annually, nearly 1.3 million people die and more than 20 million are injured in road accidents. Nowadays, governmental, industrial, and research communities around the globe are working together to adopt new information and communication technologies, which will help to improve this sorrowful statistic.

A vehicular communication network is an example of such a new technology, which aims at improving the road safety and efficiency as well as driving comfort. It combines the up-to-date developments in wireless communications, embedded systems, automotive electronics, and human factors studies. Roadside telecommunication infrastructure, which allows moving vehicle exchanging the information with the fixed networks, being one of the key elements of future intelligent transportation systems, is a special focus of this book.

The book consists of 13 original contributions, dedicated to the architectures and applications of the roadside vehicular networks, written by the international team of experts and is organized as follows. Chapters 1 – 3 provide a general introduction into the concept of vehicular ad-hoc networks and the corresponding roadside infrastructure. Chapters 4 – 7 discuss existing and prospective roadside infrastructure enabled applications. In Chapters 8 – 10, the challenges and solutions for quality of service provisioning in vehicular networks are discussed. Finally, Chapters 11 – 13 explain the techniques of information dissemination in vehicular networks with and without road infrastructure.

The book will be interesting to the engineers and researchers whose professional interests include vehicular communications and automotive systems. The book can be also used as a supportive material for the master- and graduate-level students attending the university courses in wireless networking.

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