Preface

Vehicle-to-everything (V2X) is communication between a vehicle and any entity that may affect, or may be affected by, the vehicle. It is a vehicular communication system that incorporates other more specific types of communication as V2I (vehicle-to-infrastructure), V2N (vehicle-to-network), V2V (vehicle-to-vehicle), V2P (vehicle-to-pedestrian), V2D (vehicle-to-device).

V2X can be grouped into two supergroups, V2X using common communication technologies like bluetooth or mobile networks and V2X using a dedicated special communication technology. The main motivations for the dedicated V2X technology are road safety, traffic efficiency, energy savings, and mass surveillance. The U.S. NHTSA estimates a minimum of 13% reduction in traffic accidents if a V2V system were implemented, resulting in 439,000 fewer crashes per year.[1] Equally, V2X technology is already used in countries such as China, where different safety information is being communicated between vehicles to reduce road accidents.[2] There are two standards for dedicated V2X communication depending on the underlying technology being used: (1) WLAN-based, and (2) cellular-based. [i]

In the present book, ten typical literatures about Vehicle-to-everything (V2X) published on international authoritative journals were selected to introduce the worldwide newest progress, which contains reviews or original researches on Vehicle-to-everything (V2X). We hope this book can demonstrate advances in Vehicle-to-everything (V2X) as well as give references to the researchers, students and other related people.

[i] https://en.wikipedia.org/wiki/Vehicle-to-everything