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Sommario/riassunto

Provides technical and scientific descriptions of potential approaches used to achieve indoor positioning, ranging from sensor networks to more advanced radio-based systems This book presents a large technical overview of various approaches to achieve indoor positioning. These approaches cover those based on sensors, cameras, satellites, and other radio-based methods. The book also discusses the simplification of certain implementations, describing ways for the reader to design solutions that respect specifications and follow established techniques. Descriptions of the main techniques used for positioning, including angle measurement, distance measurements, Doppler measurements, and inertial measurements are also given. Indoor Positioning: Technologies and Performance starts with overviews of the first age of navigation, the link between time and space, the radio age, the first terrestrial positioning systems, and the era of artificial satellites. It then introduces readers to the subject of indoor

positioning, as well as positioning techniques and their associated difficulties. Proximity technologies like bar codes, image recognition, Near Field Communication (NFC), and QR codes are coveredoas are room restricted and building range technologies. The book examines wide area indoor positioning as well as world wide indoor technologies like High-Sensitivity and Assisted GNSS, and covers maps and mapping. It closes with the author's vision of the future in which the practice of indoor positioning is perfected across all technologies. This text: . Explores aspects of indoor positioning from both theoretical and practical points of view. Describes advantages and drawbacks of various approaches to positioning. Provides examples of design solutions that respect specifications of tested techniques. Covers infra-red sensors, lasers, Lidar, RFID, UWB, Bluetooth, Image SLAM, LiFi, WiFi, indoor GNSS, and more Indoor Positioning is an ideal guide for technical engineers, industrial and application developers, and students studying wireless communications and signal processing