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# Real-time Communication Protocols for Multi-hop Ad-hoc Networks

Wireless Networking in Production and Control Systems

- Focuses on real-time multi-hop networks and self-contained real-time protocol stacks
- Describes the fundamental theory, discusses research findings and reviews trends in communications protocols
- Surveys and assesses the state of the art and current practices in the area

This book focuses on core functionalities for wireless real-time multi-hop networking with TDMA (time-division multiple access) and their integration into a flexible, versatile, fully operational, self-contained communication system. The use of wireless real-time communication technologies for the flexible networking of sensors, actuators, and controllers is a crucial building block for future production and control systems. WirelessHART and ISA 100.11a, two technologies that have been developed predominantly for industrial use, are currently available. However, a closer analysis of these approaches reveals certain deficits. Current research on wireless real-time communication systems shows potential to remove these limitations, resulting in flexible, versatile, and robust solutions that can be implemented on today's low-cost and resource-constrained hardware platforms. Unlike other books on wireless communication, this book presents protocols located on MAC layer and above, and build on the physical (PHY) layer of standard wireless communication technologies.

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