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Planning and Optimisation of 3G and 4G Wireless Networks

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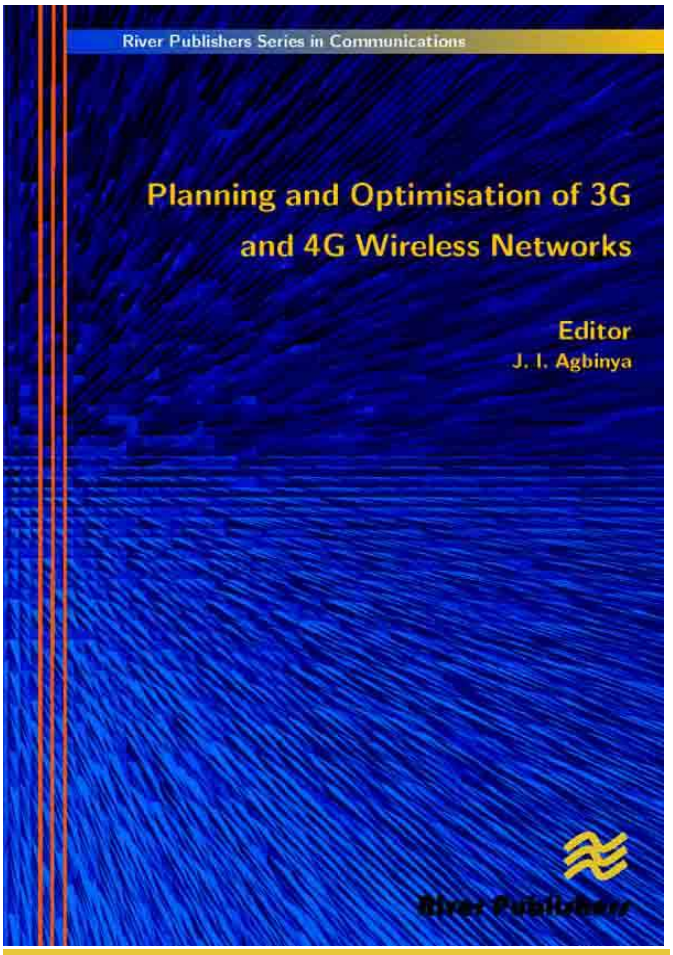
An overwhelming development has taken place in voice and data communication over the las twenty years as the industry evolved from fixed to mobile and wireless communication. This development is supported with new technologies and evolving networks from the first generation (1G), 2G, 3G and the fourth generation (4G) mobile wireless communications. During this evolution and revolution in telecommunications, the industry also changed from circuit switched networks to packet switched networks in 3G and 3G. Hence the planning of telecommunication networks has equally changed significantly. By providing the necessary background and technical content to understand stay abreast of how to plan the new network types, **Planning and Optimisation of 3G and 4G Wireless Networks** explores the idiosyncrasies of how to plan the various types of wireless networks.Packed with details of the technologies that support each network type, this cutting-edge reference leads the reader step by step on how to plan and optimize various types of wireless networks. It examines current and emerging network planning and enhancement techniques through examples in HSPA, B3G, WiMAX, mesh networks, personal area networks and wireless sensor networks. It clearly provides the different architectures of these networks along with their support design methods. It includes coverage of the latest wireless network types, planning and optimization methods in the form of:-

- 3G
- HSPA and Beyond 3G
- WiMAX (fixed and mobile) and LTE
- OFDM
- Wireless mesh networks
- Personal area networks
- Propagation models and link budgets
- Cognitive radio and spectrum sensing
- Planning of wireless sensor networks
- Synchronisation of CDMA systems
- Interference suppression
- Cross-layer optimisation
- Topology control
- Resource management

The illustrative planning and optimization methods provide the reader with a clear foot path into future networks. This book provides educators, industry practitioners, regulators, researchers and subscribers with the ideal foundation for developing the understanding required to design, deploy, train, and use wireless networks of various types.



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