

Dimensioning Of Lte Network Aalto

This practical handbook and reference provides a complete understanding of the telecommunications field supported by descriptions and case examples throughout. Taking a practical approach, The Telecommunications Handbook examines the principles and details of all of the major and modern telecommunications systems currently available to industry and to end-users. It gives essential information about usage, architectures, functioning, planning, construction, measurements and optimisation. The structure of the book is modular, giving both overall descriptions of the architectures and functionality of typical use cases, as well as deeper and practical guidelines for telecom professionals. The focus of the book is on current and future networks, and the most up-to-date functionalities of each network are described in sufficient detail for deployment purposes. The contents include an introduction to each technology, its evolution path, feasibility and utilization, solution and network architecture, and technical functioning of the systems (signalling, coding, different modes for channel delivery and security of core and radio system). The planning of the core and radio networks (system-specific field test measurement guidelines, hands-on network planning advices and suggestions for the parameter adjustments) and future systems are also described. Each chapter covers aspects individually for easy reference, including approaches such as: functional blocks, protocol layers, hardware and software, planning, optimization, use cases, challenges, solutions to potential problems. Provides very practical detail on the planning and operation of networks to enable readers to apply the content in real-world deployments. Bridges the gap between the communications in the academic context and the practical knowledge and skills needed to work in the telecommunications industry. Section divisions include: General theory; Fixed telecommunications; Mobile communications; Space communications; Other and special communications; and Planning and management of telecommunication networks. Covers new commercial and enhanced systems deployed, such as IPv6 based networks, LTE-Advanced and GALILEO. An essential reference for Technical personnel at telecom operators; equipment and terminal manufacturers; Engineers working for network operators.

LTE-A Cellular Networks: Multi-hop Relay for Coverage, Capacity and Performance Enhancement. Springer

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In this book, three different methods are presented to enhance the capacity and coverage area in LTE-A cellular networks. The scope involves the evaluation of the effect of the RN location in terms of capacity and the determination of the optimum location of the relay that provides maximum achievable data rate for users with limited interference at the cell boundaries. This book presents a new model to enhance both capacity and coverage area in LTE-A cellular network by determining the optimum location for the RN with limited interference. The new model is designed to enhance the capacity of the relay link by employing two antennas in RN. This design enables the relay link to absorb more users at cell edge regions. An algorithm called the Balance Power Algorithm (BPA) is developed to reduce MR power consumption. The book pertains to postgraduate students and researchers in wireless & mobile communications.

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LTE-Advanced is the new Global standard which is expected to create a foundation for the future wireless broadband services. The standard incorporates all the latest technologies recently developed in the field of wireless communications. Presented in a modular style, the book provides an introductory description for beginners as well as practical guidelines for telecom specialists. It contains an introductory module that is suitable for the initial studies of the technology based on the 3GPP Release 10, 11 and beyond of LTE and SAE. The latter part of the book is suitable for experienced professionals who will benefit from the practical descriptions of the physical core and radio network planning, end-to-end performance measurements, physical network construction and optimization of the system. The focus of the book is in the functioning, planning, construction, measurements and optimization of the radio and core networks of the Release 10 and beyond of the 3GPP LTE and SAE standards. It looks at the practical description of the Advanced version of the LTE/SAE, how to de-mystify the LTE-Advanced functionality and planning, and how to carry out practical measurements of the system. In general, the book describes "how-to-do-it" for the 4G system which is compliant with the ITU-R requirements.

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