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Sommario/riassunto A Local Area Network (LAN) is a network usually within a single office or

> building that links desktop computers with each other and with peripherals such as servers and printers. The interconnect is the electrical and functional association of two different services, often provided by different suppliers, and it is from LAN inter-connection that telecoms operators seek to profit. The application of LAN interconnection via satellite can be used to complement and extend existing terrestrial public access networks through interconnection of clusters of broadband islands (such as LANs and MANs) in remote regions, where terrestrial lines are expensive to install and operate. Examples include:\* Hospitals/clinics in remote and rural areas can be connected to the central hospitals in a tele-medicine environment\* Remote offices can be connected to the central office to facilitate teleworking\* University/colleges can be inter-connected to provide teleeducation facilitiesSimilarly, the possibility to provide access to such facilities in developing regions of the world is also viable and

particularly attractive in the short to mid-term. Private LAN connection

facilities could also be made available to the corporate user, offering the possibility to establish broadband internet access within a closed user group. Such a scenario could be of interest to the financial sector. By gathering the knowledge and experiences of well-known satellite systems experts from different parts of Europe this comprehensive volume provides detailed analysis on technical aspects for interconnecting local area network using satellite. Starting from traffic source modelling for different types of applications and services to different types of transmission techniques and networking functions for supporting such services, different case studies are presented to analyse the

performance of such technologies. By providing an insight to current and future developments in satellite communications systems and by covering a broad range of materials in technical aspects in relation to satellite communication systems technologies, this volume will be of tremendous use to researchers, academia and industry.\* First book to present such a thorough description of the reliability functions of satellite systems\* Discusses IP over satellite\* Provides a unique analysis and description of different simulation tools that are under development for evaluating the performance of satellite systems\* Includes a chapter devoted to traffic modelling for satellite systems\* Reviews current research and developments in security and discusses how such security functions can be implemented over satellite networks\* Addresses different types of routing strategies and includes three different case studies which have been carried out to analyse the performance of different routing strategies.