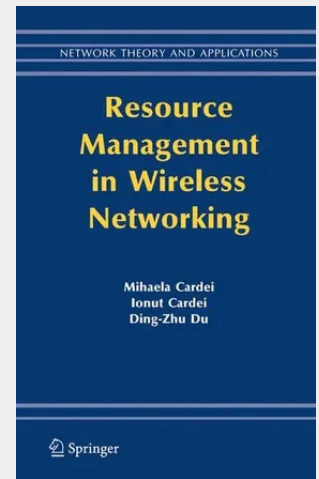


Resource Management in Wireless Networking

Following the pattern of the Internet growth in popularity, started in the early 1990s, the current unprecedented expansion of wireless technology promises to have an even greater effect on how people communicate and interact, with considerable socio-economic impact all over the world. The driving force behind this growth is the remarkable progress in component miniaturization, integration, and also developments in waveforms, coding, and communication protocols. Besides established infrastructure-based wireless networks (cellular, WLAN, sat-lite) ad-hoc wireless networks emerge as a new platform for distributed applications and for personal communication in scenarios where deploying infrastructure is not feasible. In ad-hoc wireless networks, each node is capable of forwarding packets on behalf of other nodes, so that multi-hop paths provide end-to-end connectivity. The increased flexibility and mobility of ad-hoc wireless networks are favored for applications in law enforcement, homeland defense and military. In a world where wireless networks become increasingly interoperable with each other and with the high-speed wired Internet, personal communication systems will transform into universal terminals with instant access to variate content and able of handle demanding tasks, such as multimedia and real-time video. With users roaming between networks, and with wide variation in wireless link quality even in a single domain, the communications terminal must continue to provide a level of Quality of Service that is acceptable to the user and conforms to a contracted Service Level Agreement.

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