

Minitrack: Quality of Service in Mobile and Wireless Networks

Stephan Olariu, Old Dominion University, Norfolk, VA, USA

Petia Todorova, Fraunhofer-FOKUS, Berlin, Germany

Minitrack Co-Chairs

In recent years the areas of mobile computing and wireless networks have seen an explosive growth both in terms of the number of services provided and the types of technologies that have become available. Indeed, cellular telephony, radio paging, cellular data, and even cellular multimedia services have become commonplace and the demand for enhanced capabilities will continue to grow into the foreseeable future. It is anticipated that in the not-so-distant future, mobile users will be able to access their data and other services such as electronic mail, video telephony, stock market news, map services, electronic banking, while on the move. As mobile and wireless networks are being called upon to support real-time interactive multimedia traffic, such as video tele-conferencing, these networks must be able to provide their users with Quality-of-Service (QoS) guarantees. Although the QoS provisioning problem arises in wireline networks as well, mobility of hosts, scarcity of bandwidth, and channel fading make QoS provisioning a challenging task in mobile and wireless networks.

Recently it was noticed that multimedia applications can tolerate and gracefully adapt to transient fluctuations in the QoS that they receive from the network. The management of such adaptive multimedia applications is becoming a new research area in wireless networks. As it turns out, the additional flexibility afforded by the ability of multimedia applications to tolerate and adapt to transient changes in the QoS parameters can be exploited by protocol designers to significantly improve the overall performance of wireless systems.

The minitrack focuses on fundamental challenges and issues arising in the process of QoS provisioning in mobile and wireless networks, including cellular, ad-hoc, satellite, and IP-based networks. Our principle goal was to bring together leading researchers in this booming field of research in order to identify the fundamental challenges and future perspectives of this important area. Indeed, it has been noticed that wireless communications and mobile computing are redefining computing as a discipline. The impact is expected to be profound and lasting, ranging from educational, to medical, to military, to industrial, and to societal.

We felt that it was very important to capture the state of the art and to identify the important trends in this new and exciting area of research. A minitrack on the same topic was run successfully within HICSS'36. The attendants and participants have urged us to continue the effort for HICSS'37. The result is a collection of eleven outstanding papers dealing with many aspects of QoS provisioning in mobile and wireless networks. Indeed, the minitrack brings together leading researchers in this booming field and identifies fundamental challenges and future perspectives of this important area.

We want to take this opportunity to thank a number of folks that made this minitrack possible. First, we thank the authors of the papers for considering our minitrack as an outlet for their work. Next, we extend our thanks to the referees whose dedicated work and constructive comments allowed us to present a high-quality product. Last, but certainly not least, our thanks go to Professor Gul Agha for his encouragement and support and to the indefatigable Eileen Dennis for her patience in working with us.