

Minitrack on Quality of Service in Mobile and Wireless Networks

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 rudimentary 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. Already today, there are more portable phones than computers connected to the Internet. However, the trend towards the Internet with its protocols around IP as the common basis for all communication applications seems to be quite clear.

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 an assortment of channel impairments 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 stated goal of our minitrack is to provide a forum for the most recent results on a broad range of topics of relevance to QoS provisioning in wireless and mobile networks. The intention was to offer both researchers and practitioners working in this area an opportunity to express their views on the current trends, challenges, and state-of-art solutions to various problems in this important area.

In response to the Call for Papers, we received submissions from all over the world, leading to a truly international competition. The manuscripts underwent a rigorous review process, each paper being sent to at least three referees. Based on the referee reports, a total of twelve papers were selected for inclusion in the minitrack. The final result is truly remarkable: our minitrack is a representative collection of papers on various aspects of QoS provisioning in wireless and mobile networks.

We take this opportunity to thank all the authors for their submissions. We are indebted to the referees who have put in the hard work and the long hours to review each paper in a timely and professional way. Last, but certainly not least, we wish to express our gratitude to Hesham El-Rewini for his guidance and encouragements and to Eileen Dennis for her patience in working with us.

We trust that you will find this minitrack as timely and satisfying as we.

Stephan Olariu and Petia Todorova
Minitrack Co-chairs