Center of Excellence in Intelligent Engineering Systems

SEMINAR

Speakers: Prof. Mounir Frikha

Director, Sup'Com (Higher School of Communication of Tunis)
Tunisia

Mounir Frikha is currently the Director of Sup'Com, the first Engineering School in Telecommunications in Tunisia. He received his engineering degree in 1993 and his Ph.D. degree in 1999, both in Telecommunications from the University of Braunschweig, Germany. Ha was an associate Professor from 1994 to 1999 at the Institute of Communications Systems (ICS), Technical University of Braunschweig, Germany, and was the leader in development of projects in cooperation with the industry (e-plus: 3rd mobile phone operator in Germany). He worked from 1999 to 2001 at Siemens, on cellular networks planning projects and was a project leader in many projects between Siemens and the operator of cellular networks in Morocco and Lebanon, and a leader for the planning of the cellular network for the second license in Tunisia. He was the Head of the Network Department at Sup'Com from 2005 to 2011 and was involved in many European projects to improve the quality of teaching (TEMPUS) and was responsible for a Master Degree at Sup'Com. He is president and member of several international conferences program committees, and the author of about 120 international conference and journal papers and several books within the Hermes collection. His research interests include the management of Quality of Service, Mobility and Traffic Engineering.

Date: **Monday, February 8, 2016**
Time: **1:00 PM**
Venue: **Engineering Building, Second floor, Room 24C28 (ECE Seminar Room)**

Title

Large-scale modeling of multimedia traffic in next generation networks

Abstract

Today, with more than two milliards Internet users worldwide, the information and communication technologies are increasingly present in our daily activities. In this context, the interruption of services provided by networks, or even a significant degradation of quality of service, are becoming less and less tolerable. Ensuring the continuity and quality of services is thus a major challenge for network operators.

For operators, the solution is to have a more regular monitoring of their infrastructures and to use traffic engineering techniques to anticipate the degradation of quality of service resulting from the phenomena of congestion. The use of these techniques, however, assume to have models, theoretical methods and appropriate software tools to predict and control the quality of service flows.

In this presentation, we study a fluid mathematical models to evaluate and optimize the performance of resource sharing mechanisms between flows in networks. First, we offer a simple and explicit approximations to evaluate the end-to-end throughput of TCP traffic [The traffic carried by the Transmission Control Protocol (TCP) is called elastic traffic for its capability to adapt its rate according the network status] in a network dedicated only for elastic traffic. We extend then these results to the case of a model of network shared between elastic and streaming flows (we assume that streaming flows have a constant rate) in a multi-queuing network. Our approximations is based on a quasi-stationary assumption. Our approximations are validated by simulations with NS2.

ALL ARE CORDIALLY INVITED