



Dear PhD students and professors,

The Doctorate in Telematics Engineering of the UPC invites you to attend this Seminar, organized by the Department of Telematic Engineering.

**Seminar title:** *QoS issues in heterogeneous networks*

**Professor:** Dra. Isabelle Guérin Lassous

Full Professor at the Department of Computer Science Université Lyon I. Lyon, FRANCE

<http://perso.ens-lyon.fr/isabelle.guerin-lassous/>

**Dates:** 15/06/09 – 18/06/09 (10:00-12:30)

**Total hours:** 10 hours

**Room:** C3-304

**Contents:**

Users requiring different services (multimedia services, computing services, etc.) from wired and/or wireless networks are becoming a reality. The diversity in communicating applications is increasing and each of these applications has different features. Internet is then shared between classical data transfers (http traffic for instance), large transfers (like bulk data transfers of a grid application or video streaming for instance) and constrained applications mainly in delay (like Telephony over IP for instance), without forgetting illegitimate traffic like spam traffic for instance. These applications have different constraints and should be treated differently. The heterogeneity of applications makes also the network resources sharing more difficult if the constraints of the applications have to be fulfilled.

The packets of these different applications are unlikely to follow a path consisted of several communication links based on the same underlying communication technology. The network used to transfer applications is very often heterogeneous. A heterogeneous network can be seen as a single core network with different access technologies including wired and wireless users. The access networks have different technologies (WLAN, Satellite, ADSL, UMTS, Fiber To The Home, ...), which makes their management more and more difficult. Currently, most demanding services cannot be successfully supported on an end-to-end basis across a heterogeneous network, because there still is no end-to-end QoS solution available, either in the access network nor between the different network technologies.

The heterogeneity of networks and of applications makes the services providing difficult. Moreover, operators have also to face a trade-off between users' satisfiability and the optimization of the network usage. This course will not cover all the QoS issues and the possible solutions in heterogeneous networks but will focus on some specific problems like the management of heterogeneous applications in multihop wireless networks or in the core network, the resource allocation in heterogeneous wireless networks and the definition of a performance evaluation framework for heterogeneous networks with heterogeneous applications.

**Short CV:**

Isabelle Guérin-Lassous is a full Professor at the Department of Computer Science Université Lyon I and at the LIP laboratory - INRIA team RESO (ENS Lyon). She got her PhD in Computer Science of the University Paris 7 in 1999. Her research activity focuses on multihop wireless networks, QoS issues in wired and wireless networks, resource allocation in heterogeneous wireless networks and performance evaluation.

She is member of the editorial team of the electronic journal Discrete Mathematics & Theoretical Computer Science, Editorial board of Computer Communications, Editorial board of Ad Hoc Networks and Guest editor of Performance Evaluation journal. Besides, she is member of many program committees and works on several research projects.