

Máster en Ingeniería de Telecomunicación

Aplicaciones Multidisciplinares - Seminarios

Mobile and wireless networks: Myriad technologies enabling unified 5G solutions

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10 de noviembre de 2016 a las 15:00h en el aula 1.1 del edificio Altabix.

Abstract:

The wide range of available wireless technologies has allowed connectivity within different scenarios. Such scenarios vary from coverage and frequency to bitrate and application types. 5G networks base their evolution on the heterogeneity of the diverse wireless technologies, enabling dynamic solutions to fulfill the assorted connectivity requirements of the end-users. The European Commission has funded, through different programmes such as FP6, FP7 and H2020, several high-performance testbed facilities towards empowering telecommunications research in academia and industry. Such a wide range of experimentation facilities provides cutting-edge technologies, from optical networks to wireless communication technologies, for research within the Future Internet and Research Experimentation (FIRE) initiative. In this lecture we will go through the different wireless access technologies considered under the 5G umbrella, understanding their features and their application contexts. Furthermore, we will review the different trends in research and industry towards merging the several solutions under a single unified elastic network capable to fulfill the different user connectivity needs. Finally, we will overview the different FIRE wireless testbeds available in Europe, Korea, and Australia in order to become familiar with such facilities and remotely experiment on top of them.

Bio:

Dr. Marquez-Barja currently is a Research Assistant Professor in the CONNECT Centre for Future Networks and Communications (formerly CTVR) at Trinity College Dublin (TCD), Ireland. He is involved in several European research projects. He is Technical Coordinator for the FORGE project, in TCD; Co-Principal Investigator in the Fed4FIRE/FAVORITE, eWINE, and FUTEBOL projects. He is also the Technical Coordinator of the FUTEBOL consortium, which is led by TCD. He is a Senior member of the IEEE Communications Society as well as the IEEE Education Society, where he participates in the Standards Committee and contributes to the IEEE P1876 - Networked Smart Learning Objects for Online Laboratories standards working group. His main research interests are: advanced heterogeneous dense cells architectures; elastic and flexible future wireless networks and its integration and impact on optical networks; IoT clustering; virtualization; provisioning and dynamic resource allocation towards dynamic converged networks. He is also interested in vehicular networks, mobility and handovering within smart cities. Dr. Marquez-Barja has established the Ephemeral Wireless Networks research area. More info: <http://www.marquez-barja.com>.