UNIVERSIDAD DE GRANADA

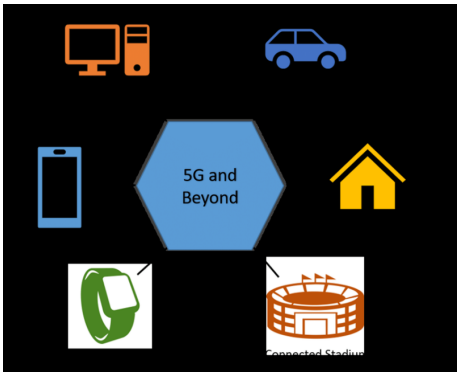
Departamento de Teoría de la Señal, Telemática y Comunicaciones

# Postgraduate Course: Towards 5G&B: standardization, emerging technologies & applications to ITS.

25/10/2023

Novedades Charla

Postgraduate Course within the MOBILITY EDUCATION ERASMUS+ Program




Title: **"Towards 5G&B: standardization, emerging technologies & applications to ITS"**

Invited Professor: **Iyad Dayoub**, Université Polytechnique Hauts-de-France (UPHF)

E-mail: @email

Location: Aula B1 (Modulo B), ETSIIT, University of Granada

Dates/Times:

- Wednesday 25 October, 12:00 - 14:00 and 16:00 - 18:00
- Thursday 26 October, 10:30 - 12:30 and 16:00 - 18:00

**Course Description:**

In this course, we will present recent and emerging technologies for future 5G/6G cellular communications.



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In particular, we will discuss advances in the various technologies currently being discussed for these future systems, such as Cognitive radio, massive MIMO and millimetre wave communications, IoT, M2M communications, as well as non-orthogonal NOMA access.

In addition, the applications of these technologies in intelligent transport systems (ITS) will first be discussed in the context of existing systems. We then discuss the challenges and future directions of research in Europe aimed at developing future European land transport systems (rail and vehicular).

**Agenda:**

- Introduction, Overview & Motivation: Multi-user Wireless Communications
- Evolution of cellular networks: 5G&B & standardization
- Current & possible-future Enabling Technologies for 5G&B
- Overview of ITS:
    - Vehicular Communications-based VANETs
    - Railway communications-based
- ITS & high-speed Radio environment: Multi-path doubly-selective channels
- Some national & European projects:
    - H2020: Shift2Rail
    - ANR: mmWave4Rail


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