

Short Course Proposal-EuCAP 2011

Radio Network Optimization and Planning of High Capacity Heterogeneous 3G and 4G networks

1. Course Header.

Course Title: Radio Network Optimization and Planning of High Capacity Heterogeneous 3G and 4G networks

Course Type: Half Day

Contact Person:

Name: Francisco Falcone

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2. Course Description

Who should attend and why

This course is of interest for the practicing engineer, as well as for people engaged in research within wireless communication systems. Due to the fact that coverage/capacity relations will be deeply analyzed, a holistic approach from RF up to system level will be given. This way, from the antenna engineer, to radiopropagation all the way to system engineers will find interest in the topic of the course.

Course Topics

The aim of this course is to explain the procedures and tools required for the planning and further optimization of high speed 3.5G, 3.75G and future LTE mobile networks. Coverage-capacity relations are described, related to radio channel characteristics as well as to system level considerations. Link simulation as well as system level simulation techniques are described in order to fulfill a realistic planning and optimization procedure. The issues related to high capacity femtocell environments will be described in order to achieve the optimal performance in a heterogeneous network topology.

Topics to be described within the short course are:

- Network topology and radionetwork attributes
- Heterogeneous Network layouts
- Coverage-capacity relations
- Radiopropagation (frequency and time) considerations
- Case Studies

Means of instruction: slides

3. Course Instructors

Name: Francisco Falcone

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Short Bio:

Francisco Falcone: Telecommunication Engineer (99) and PhD in Communication Technology (05) by the Public University of Navarra (UPNA). From 1999 to 2000, Microwave Commissioning Engineer in Siemens-Italtel. From 2000 to 2008, Radio Network Engineer in Telefónica Móviles, working in optimization and planning of 2G up to 3.75G radio access networks. From 2003 to 2009, assistant lecturer at UPNA and since 2009, associate professor at UPNA. From 2005 to 2008, internal instructor in Telefónica in network technology, earning the best instructor award in 2008. Senior Member IEEE, member of MTT-11 committee, IEEE ES Spanish chapter and IEEE TMC chapter.

4. Additional Information

The candidate has given in the last 4 years several courses to Network Engineers in Telefónica, earning the best internal instructor of the Telefonica Group in 2008.

In 2009, the candidate was invited by the Telefonica to give a similar workshop, regarding LTE.

This course has been offered in EuCAP 2010 in Barcelona, with an attendance of approximately 12 persons.