



IDCOM Lunchtime Seminar

Thursday 11 September 3.00pm

Seminar Room 3.01

Alexander Graham Bell Building, King's Buildings, EH9 3JL

Prof Bruno Clerckx

Assistant Professor – Imperial College, London

The Wireless Interference Paradigm – To Align and Harvest

Abstract. Wireless communication and energy networks have enabled a plethora of novel applications in the last years. Both make use of the same and unique RF medium, but have been so far designed independently from each other. In this talk, we will discuss some recent progresses in the area of Joint Wireless Information and Energy Transfer that wirelessly transfers energy jointly with information in wireless networks. The area, if found feasible, will create a new paradigm shift in future capacity and energy efficient wireless communication and energy networks (and in particular in M2M and IoT applications), by viewing them as a single network designed under a unified framework and by overcoming the energy constraint of wireless devices through the transfer/harvesting of RF energy. Contrary to current wireless communication networks, interference is viewed as a source of energy to be harvested rather than mitigated. In the talk, we will discuss the role of interference in joint wireless information and power networks and identify the rate-harvested energy region and suitable interference management techniques in MIMO interference and broadcast channels.

Biography: Bruno Clerckx is an Assistant Professor in the Electrical and Electronic Engineering Department at Imperial College London (London, United Kingdom). He received his M.S. and Ph.D. degree in applied science from the Universit  catholique de Louvain (Louvain-la-Neuve, Belgium) in 2000 and 2005, respectively. He held visiting research positions at Stanford University (CA, USA) in 2003 and Eurecom Institute (Sophia-Antipolis, France) in 2004. In 2006, he was a Post-Doc at the Universit  catholique de Louvain. From 2006 to 2011, he was with Samsung Electronics (Suwon, South Korea) where he actively contributed to 3GPP LTE/LTE-A and IEEE 802.16m and acted as the rapporteur for the 3GPP Coordinated Multi-Point (CoMP) Study Item. He is the author or coauthor of two books on MIMO wireless communications and networks and numerous research papers, standard contributions and patents. He received the Best Student Paper Award at the IEEE SCVT 2002 and several Awards from Samsung in recognition of special achievements. Dr. Clerckx serves as an editor for IEEE TRANSACTIONS ON COMMUNICATIONS.

Tea, coffee & biscuits 2.30pm – 2nd floor foyer