



Hamilton Institute

Machine-to-Machine in Smart Cities & Smart Grids Vision, Technologies & Applications

Dr Mischa Dohler
CTTC, Barcelona

Monday, January 21st, 2013
@ 2.00pm

Abstract: The unprecedented communication paradigm of machine-to-machine (M2M), facilitating 24/7 ultra-reliable connectivity between a prior unseen number of automated devices, is currently gripping both industrial as well as academic communities. Whilst applications are diverse, the in-home market is of particular interest since undergoing a fundamental shift of machine-to-human communications towards fully automatized M2M. The aim of this presentation is thus to provide academic, technical and industrial insights into latest key aspects of wireless M2M networks, with particular application to the emerging smart city and smart grid verticals.

Notably, I will provide an introduction to the particularities of M2M systems. Architectural, technical and privacy requirements, and thus applicable technologies will be discussed. Notably, we will dwell on the capillary and cellular embodiments of M2M in smart homes. The focus of capillary M2M, useful for real-time data gathering in homes, will be on IEEE (.15.4e) and IETF (6LoWPAN, ROLL, COAP) standards compliant low-power multihop networking designs; furthermore, for the first time, low power Wifi will be dealt with and positioned into the eco-system of capillary M2M. The focus of cellular M2M will be on latest activities, status and trends in leading M2M standardization bodies with technical focus on ETSI M2M and 3GPP LTE-MTC.

Open technical challenges, along with the industry's vision on M2M and its shift of industries, will be discussed during the talk.

Biography: Mischa Dohler is now Director of Research of CTTC in Barcelona. He is Distinguished Lecturer of IEEE ComSoc, Senior Member of the IEEE, and Editor-in-Chief of ETT. He frequently features as keynote speaker and panelist. He had press coverage by BBC and Wall Street Journal. He is a tech company investor and entrepreneur, being the co-founder, former CTO and now board member of WorldSensing. He loves his piano and is fluent in 6 languages.

In the framework of the Mobile VCE, he has pioneered research on distributed cooperative space-time encoded communication systems, dating back to December 1999 and holding some early key patents. He has published more than 150 technical journal and conference papers at a citation h-index of 30 and citation g-index of 64, holds a dozen patents, authored, co-edited and contributed to 19 books, has given more than 30 international short-courses, and participated in ETSI, IETF and other standardisation activities. He has been TPC member and co-chair of various conferences, such as technical chair of IEEE PIMRC 2008 held in Cannes, France. He is/has been holding various editorial positions for numerous IEEE and non-IEEE journals and special issues.

Since 2008 he has been with CTTC and from 2010-2012 the CTO of WorldSensing. From June 2005 to February 2008, he has been Senior Research Expert in the R&D division of France Telecom, France. From September 2003 to June 2005, he has been lecturer at King's College London, UK. At that time, he has also been London Technology Network Business Fellow receiving Anglo-Saxon business training, as well as Student Representative of the IEEE UKRI Section and member of the Student Activity Committee of IEEE Region 8 (Europe, Africa, Middle-East and Russia).

He obtained his PhD in Telecommunications from King's College London, UK, in 2003, his Diploma in Electrical Engineering from Dresden University of Technology, Germany, in 2000, and his MSc degree in Telecommunications from King's College London, UK, in 1999. Prior to Telecommunications, he studied Physics in Moscow. He has won various competitions in Mathematics and Physics, and participated in the 3rd round of the International Physics Olympics for Germany.

Venue: Seminar Room, Hamilton Institute, Rye Hall, NUI Maynooth

Time: 2.00pm - 3.00pm

Travel directions are available at www.hamilton.ie

