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# IWPCM 2011

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## PRESENTATIONS LISTS

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### GUEST SPEAKERS

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*Pr. Luis Correia*

#### **Challenges in Propagation and Channels in the Networks of the Future**

*Telecommunications are evolving fast, with many trends being observed at the several layers of the system/network structure. "Networks of the Future" and "Future Internet" became trends that encompass many views and goals, namely within mobile and wireless communications, most of them related to network aspects, as well as services and applications. This paper reviews the trends mentioned above, and then maps them onto the challenges that can be identified in the area of propagation and radio channel. These challenges extend beyond the usual concept of mobile and wireless cellular and local area networks, including application driven areas, like sensor and in- and on-body networks, device-to-device and machine-to-machine communications, and ambient and context awareness. On the other hand, more "classical" challenges are also at stake, coming from, e.g.: increase in data rates, hence bandwidth, hence carrier frequency; energy efficiency; efficient MIMO/beamforming; channel estimation and awareness; inclusion of antennas.*

*Pr. Thomas Kurner*

#### **Cellular Network Planning**

*TBD.*

*Dr. Chia-Chin Chong*

#### **Wireless home energy management and mobile wellness applications**

*The concept of wellness mobile is a novel mobile service wherein wireless handheld devices such as cellphones are equipped with a wellness monitoring application, thereby enabling real-time self-wellness monitoring by the cell phone user. The wellness mobile will provide a safe and protective environment for an increasing cell phone user-population to help combat anti-wellness factors such as stress, fatigue, and illness. We demonstrate using experimental results that discerning activity-induced human stress using skin temperature fluctuations is possible using inexpensive biometric sensors. However, this emerging technology is still in its infancy, and developing quantifiable measures of wellness and designing intelligent monitoring systems is quite challenging. This paper reviews the recent trends and challenges facing this maturing revolutionary mobile application, and provides a conceptual framework for the next generation of telemedicine.*

*Dr. Su-Khiong Yong*

## **60GHz wireless technology: past, present and future trends**

*The explosive demand for multi-gigabit data rates to support variety of new applications has inevitably pushed to the emergence of 60 GHz radio technology. In the past decade, we have witnessed significant R&D work and industry efforts to demonstrate the viability of wideband 60 GHz CMOS RFIC circuit and transceiver, have now become a reality for commercialization. In this talk, we will present a comprehensive overview of the 60 GHz wireless technology. First, we discuss the competitiveness of 60 GHz technology with respect to other existing technologies and how these technologies could complement each other to provide a complete indoor wireless solution. We will also review the current status and development in the worldwide 60 GHz frequency spectrum allocation, regulatory requirements as well as industry standardization efforts. Next, we will discuss the propagation issues, trade-offs involved in designing a high data-rate 60GHz system as well as radio architectures. In particular, we will discuss antenna array beamforming as an enabling technology to achieve Gbps throughput over general 60 GHz NLOS channels as well as comparing OFDM and SC-FDE as two major potential baseband modulation schemes. Finally, we will wrap up the talk with conclusions and future challenges that lie ahead of the 60 GHz community that requires more innovation and breakthrough research activities..*

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### TECHNICAL SESSION 1

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*Denia Bouhired, Geoff Hilton and Mark Beach (University of Bristol)*

#### **A Performance Analysis of Directive Antennas in Relation to Environmental Characterizations**

*Alaa Choumane, David Carsenat and Cyril Decroze (XLIM)*

#### **Multipath Propagation Channel Emulation For Antenna Diversity Measurements**

*Christophe Roblin (ENSTA)*

#### **Modelling of the Path Loss Variability due to Body-Worn UWB Antennas in BAN Scenarios**

*Paul Ferrand, Jean-Marie Gorce, Claire Goursaud (INSA)*

#### **On the Packet Error Rate of Correlated Shadowing Links in Body-Area Networks**

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TECHNICAL SESSION 2

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*Jianhua Zhang (Ministry of Education), Fenghua Zhang (Ministry of Education), Guangyi Liu (China Mobile) and Weihui Dong (China Mobile)*  
**Capacity evaluation of Intra-Site coordinated multi-points transmission (CoMP) at 2.35 GHz**

*Jean-Frédéric Wagen (Fribourg University of Applied Sciences)*  
**On optimal indoor antennas placement: a Distributed Terminals approach**

*Laurent Maviel (Siradel)*  
**On the use of statistic in deterministic channel models**

*Jan Ellenbeck, Obaid Mushtaq, Farid Sheikh and Safiullah Shahrukh Qazi (Technische Universitaet Muenchen)*  
**Calibrating an Efficient C++ Implementation of the ITU-R M.2135 Channel Model for Use in System-Level Simulations**

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TECHNICAL SESSION 3

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*Alain Sibille, Yves Lostanlen*  
**Spatial variability of Cognitive Radio channels**

*Irina Vermesan, David Carsenat and Cyril Decroze (XLIM)*  
**An Algorithm for Mitigating the Multipath Propagation Effects in UWB Target Identification Imaging**

*Nourddine Azzaoui (Blaise Pascal university) and Laurent Clavier (IEMN)*  
**Spatial evolution of radio channel modelled with stable random processes**

*François Bentosela (Centre de Physique Théorique) and Horia Cornean (Aalborg University)*  
**On new deterministic models for MIMO systems**

*Andres Alayon Glazunov (KTH Royal Institute of Technology)*  
**Kronecker and Keyhole Channels Expansion into Spherical Vector Wave Multipole Modes**

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TECHNICAL SESSION 4

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*Jean-Marie Gorce (INRIA)*  
**Presentation of the Future Internet of Things platform for Cognitive Radios in Lyon**

*Xiang Li, Rodolphe Vauzelle, Yannis Pousset and Pierre Combeau (University of Poitiers)*  
**A hybrid radio propagation channel model for confined environments**

*Meiling Luo, Dmitry Umansky, Guillaume Villemaud (INSA Lyon)\**  
**Estimating Channel Fading Statistics based on Radio Wave Propagation Predicted with Deterministic MR-FPDF Method**

*Raffaele D'Errico and Rudant Lionel (CEA LETI)*  
**A Wideband Radio Channel Model for Aircraft Wireless Sensor Network**